



2013

REPORT TO CONGRESS ON SUSTAINABLE RANGES

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EXECUTIVE SUMMARY

This is the tenth Report to Congress on Sustainable Ranges (hereinafter referred to as the Sustainable Ranges Report [SRR]) which summarizes the Department of Defense's (DoD's) actions to ensure the long-term sustainability of its training ranges. The SRR responds to Section 366 of the fiscal year (FY) 2003 National Defense Authorization Act (NDAA), which requires DoD to develop, and submit to Congress, a comprehensive plan to address training constraints caused by limitations on the use of available military lands, marine areas, and airspace in the United States and overseas. Section 311 of the FY2013 NDAA extended the reporting requirement through FY2018.

In December 2001, the Deputy Secretary of Defense directed the Under Secretary of Defense for Personnel and Readiness (USD(P&R)), in partnership with the Deputy Under Secretary of Defense for Installations and Environment (DUSD(I&E)), the Director, Operational Test and Evaluation (DOT&E), and the Military Departments, to form an Integrated Product Team (IPT). The IPT is the coordinating body for all encroachment issues affecting DoD ranges, operating areas (OPAREAs), and other locations where the military trains, tests, or evaluates new weapons and sensors and provides oversight of DoD's Sustainable Ranges Initiative (SRI). The goal of the SRI is to sustain full operational use of and access to the live training and test domain through proactive policy, planning, and partnerships to avoid and/or mitigate restrictions from competing interests and encroachment.

Although this report focuses on DoD training ranges only, it also touches on test and evaluation (T&E) ranges to the extent that these ranges support training activities and in the broader perspective of DoD's overall SRI. The DoD test community separately reports on encroachment factors impacting research, development, test, and

evaluation activities in their *Strategic Plan for T&E Resources*.

Over the past 10 years, DoD has put into place policies, processes, and procedures that comprehensively address current and future range capability, sustainment, and encroachment and has reported to Congress annually on its progress in this area. This year's report provides Congress with an update to the DoD 2012 SRR. The 2013 SRR:

- ▶ Revalidates the 2012 SRR current and future range requirements
- ▶ Revalidates the 2012 SRR range capability and encroachment assessments
- ▶ Addresses critical range and training issues identified by the Military Services
- ▶ Reports progress toward the Office of the Secretary of Defense (OSD) and Military Service goals and milestones for implementing the Sustainable Range Program
- ▶ Reports projected funding requirements
- ▶ Updates to the 2012 Range Inventory

Past SRRs have included individual assessments with detailed data on encroachment and range capability factors affecting DoD ranges. Analysis of the range assessment supporting data over the last 10 years by USD(P&R) and the Military Services confirm that changes in range capability and encroachment are not significant from year to year. In light of this fact, USD(P&R) requested that the Military Services validate the 2012 range assessment data and report on significant changes, if any, for this year's reporting requirement. USD(P&R) intends to conduct a full evaluation of range capabilities and the adequacy of ranges to provide the required training support and current impacts of encroachment every three years. The

next range assessment review will be included as part of the 2015 SRR to Congress.

As in past years, this year's report includes projected funding requirements for FY2013 – FY2017 for each of the Military Service's to implement their planned actions, the status of the Defense Readiness Reporting System (DRRS) Range Assessment Module (RAM), the Readiness and Environmental Protection Initiative (REPI), regional partnerships, and the Office of Economic Adjustment (OEA) Compatible Use Program. A new initiative introduced in this year's report is the web-based range visibility tool which provides availability of training ranges across the Military Services to optimize utilization of training resources.

EMERGING SRI CHALLENGES

While OSD has been proactively addressing the many challenges related to encroachment and competing interests on the live training and test domain, those challenges continue to grow as new ones emerge and current ones are exacerbated by different conditions and events. Examples of emerging challenges include DoD's efforts to address competition for land from both renewable energy and urban development. To meet these challenges, DoD is working collaboratively with the Department of the Interior (DOI) through the Interagency Land Use Coordinating Committee (ILUCC) to develop guidelines for siting of renewable energy projects on Bureau of Land Management (BLM) lands. DoD is also partnering with DOI's Bureau of Ocean Energy Management (BOEM) to resolve potential issues related to renewable energy, particularly wind turbines offshore. DoD and BOEM have assessed over 2,000 lease blocks on the Atlantic Outer Continental Shelf proposed for utility scale offshore wind energy.

Endangered species management issues also remain a significant challenge. For example, the U.S. Fish and Wildlife Service is required to rule on 251 candidate species for potential listing on the Federal Lists of Endangered and Threatened Wildlife and Plants by 2017. OSD has identified 110 candidate species as having a potential impact on training, if listed. Eight of the 110 species—including the Greater Sage Grouse, the Red Knot shorebird, and Taylor's Checkerspot butterfly—could have a significant impact on training.

Electromagnetic spectrum (EMS) access is a prerequisite for modern military training.

Concurrently, consumer demand for wireless devices like smartphones and tablet computers, and the associated data-intensive applications, is growing as consumer's demand greater mobility and better data access. For example, the National Telecommunications and Information Administration (NTIA) and the Federal Communications Commission (FCC) are working to make available a total of 500 MHz of federal and non-federal spectrum over the next 10 years, suitable for both mobile and fixed wireless broadband use. DoD is investigating means to cohabitate with commercial wireless users and develop methods to access spectrum that are more spectrally efficient, flexible, and adaptable. In addition to these improvements, DoD will continue to work closely with spectrum regulators, nationally and internationally, to ensure these improvements are authorized for use.

As U.S. Forces drawdown from Afghanistan and home station training increases, the competition for ranges, airspace, and maneuver training land is expected to increase. This competition within the live training domain will be exacerbated by existing shortfalls and growing encroachment challenges. DoD will continue to address these challenges in a comprehensive manner through policy, programs, and proactive partnering at the federal, state, and local levels.

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INTRODUCTION

The 2013 SRR provides an update to the 2012 SRR; highlighting significant changes from last year's report. The 2013 SRR is focused on:

- ▶ Highlighting significant Military Service capability and encroachment issues
- ▶ Updating the Military Service-specific actions, milestones, and status associated with DoD's seven SRI goals
- ▶ Current and planned funding associated with the SRI
- ▶ Updating Congress on the status of the Range Assessment Module to the Defense Readiness Reporting System
- ▶ Introducing the Range Visibility Tool
- ▶ Highlighting success stories in DoD's efforts to mitigate encroachment
- ▶ Reporting on program directions, priorities, and management initiatives
- ▶ Reporting changes to the DoD training range inventory

USD(P&R) and the Military Services validate as current both the current and future requirements and the range capability and encroachment assessments reported in the 2012 SRR. Exceptions to this are the updates provided by the Military Services in Chapter 2; therefore, the content and issues discussed in the 2012 SRR that remain applicable are not duplicated in this year's report.

NDAA Section 366(d) requires the Government Accountability Office (GAO) to provide Congress with an independent evaluation of DoD's annual

report on sustainable ranges. In its assessment of the 2012 SRR, GAO acknowledged that DoD met the annual Congressional reporting requirements and GAO made no formal recommendations.

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MILITARY SERVICE UPDATES

2.1 ARMY

Details from the Army's 2012 SRR Special Interest Section remain applicable; therefore, the focus of this section will highlight significant changes in status and focus on the most relevant issues to the Army in FY2013. The Army continually works to improve capabilities at its training ranges and installations. While capabilities are currently at an acceptable level to support readiness, there are still numerous challenges that the Army is working to address. These include:

- ▶ Transitioning from a force focused on predictable deployments to a force needing to train to multiple competencies in various operational environments against hybrid threats
- ▶ Leveraging investments in technologies (e.g., integrating live, virtual, constructive, gaming [LVCG] training technology) to take better advantage of limited training time and resources and to increase complexity of training at home stations
- ▶ Continuing to engage with key partners at local, state, and federal levels to protect the valuable training land, airspace, and frequency spectrum that the Army will need in order to support continued readiness and mitigate encroachment in the future

The Army is transitioning to a force characterized by operational adaptability; an agile, responsive force capable of being tailored to respond to any mission, anytime, anywhere. Army training must balance current operational missions while simultaneously preparing forces to meet future requirements.

Meeting the readiness requirements of this complex, strategic environment will be challenging due to an expected decline in resources. The Army is supporting a broader range of missions with a smaller force and less resourcing flexibility. It is balancing ongoing wartime demands and preparing

for future challenges. The future requires the Army to be regionally responsive and globally engaged. Army training will provide the critical depth and versatility needed to support the three strategic roles of Prevent—Shape—Win by conducting offensive, defensive, and stability operations.

The Army focuses on best management practices for range operations and training area management based on the following three pillars that form the foundation of the Army's Sustainable Range Program:

- ▶ **Capability**—Configuration and characteristics of ranges and training lands necessary to support live training requirements
- ▶ **Availability**—Necessary infrastructure to support capabilities (e.g., land maintenance, effective scheduling)
- ▶ **Accessibility**—Ability to conduct live training when and where required, in light of competing requirements (e.g., environmental management and compliance, incompatible development)

The need for land and airspace will remain critical to meeting future requirements. Protection of these assets allows training areas to evolve at the same time that operating environments are evolving. Limitations on maneuver space, live fire ranges, and training facilities due to encroachment are actively mitigated by the Army. The Army manages encroachment impacts through continued support of DoD and interagency efforts to protect its training areas, airspace, and frequency spectrum to ensure the ability to support evolving systems and capabilities. A key component of the Army's engagement in interagency efforts is the Army's ongoing participation in the DoD Siting Clearinghouse. Through this forum, the Army carefully reviews and coordinates with DoD, other Military Services, and industry developers to ensure critical Army missions are protected while supporting renewable energy development.

The Army's range capabilities have not changed substantially from the 2012 SRR. Likewise, the Army's encroachment challenges related to competition for range space, airspace, and alternative energy projects presented in the 2012 SRR remain current in 2013. Therefore, the Army's focus is how they are restructuring to meet challenges into the future.

CURRENT ENVIRONMENT

The Army is at a turning point concerning how it views land and ranges as it trains for future operations. A significant challenge is how to incorporate the Decisive Action Training Environment and Unified Land Operations (ULO) while maintaining the lessons from stability operations and counterinsurgency learned over the past decade. The Army must be capable of developing these capabilities within a joint environment while operating within the constraints of the more austere fiscal environment of the future. Based on lessons learned, the Army is transforming into an organization prepared to conduct ULO. This effort includes regionally aligned forces, modernization, modular conversion, rebalancing our forces across the active and reserve components, and adopting a force generation model that supports readiness.

The Army leverages historical and current operational lessons learned to provide input to the Army Training Strategy (ATS) and to align the Training Support System (TSS) with current warfighting doctrine and transformation of forces. The reviews are forward looking and seek to manage change.

TSS OVERVIEW

TSS is a series of systems that delivers products, services, and facilities for all three training domains. Products are individual training aids, devices, simulations, and simulators in the LVCG environments. Services are management and operations staff and resources at all levels, but primarily at the installation level. TSS facilities are ranges, training land, other live training capabilities such as Urban Operations training facilities, Mission Training Complexes (MTCs) supporting mission command training, and Training Support Centers and simulations facilities.

The Army's TSS is characterized by effectively employing available LVCG capabilities to supplement and enhance training capabilities.

There is an increased emphasis on home station training with regional training capabilities to provide a persistent, integrated training environment capable of supporting individual and multi-level collective training at the brigade level and below.

The TSS enables training in all three training domains - operational, institutional, and self-development. Army readiness requirements drive improvements to home station TSS enablers, both to expand training opportunities and conserve resources.

The TSS is designed to adapt to commanders' needs as the Army transitions from training for a full range of offensive, defensive, and stability operations. Changes in force structure and stationing, including the increased focus on the Asian-Pacific operational environment, are changing the demands for training support. Modifications to the Force Generation process will also alter the frequency and numbers of events that must be enabled by the TSS.

MAJOR OBJECTIVES

DoD identified 11 critical joint force missions. The Army must be prepared to support these joint force missions with land forces capable of executing a broad range of missions with smaller forces. Training land and ranges are the critical training enablers that support these missions, primarily in the operational domain. The Army has developed programs, systems, and processes that support training land and ranges to meet mission objectives.

The Force Generation Model

The Army continues to train units through its progressive readiness model that provides a sustained flow of forces prepared for current operational engagements. Army units are responsible for developing training plans required to meet force generation defined Unit Proficiency Levels. The Force Generation Model is being adapted to provide a versatile mix of organizations capable of supporting emerging national defense objectives. Force Generation processes synchronize resources to achieve training readiness levels at specific points in the proficiency cycle. Consequently, training resources are then associated with high-payoff, multi-level, collective training events resulting in a progressive path to unit proficiency.

Home Station Training

Home station training is transitioning from counterinsurgency training to training for a wide range of offensive, defensive, and stability operations, and is a critical component in building cohesive Army units. Modifications in the Force Generation process drive the frequency and number of training events at home station. The training support enablers provided at home station are transitioning from a blended training approach to an Integrated Training Environment (ITE) to maximize scarce resources, while simultaneously increasing operational realism and allowing commanders flexibility to scale training events to level, mission, and experience levels.

The Army is starting phased implementation of the ITE that will improve commanders' ability to more easily use LVCG capabilities in a seamless application, allowing units to achieve levels of training realism never before achieved at home station. LVC-Integrating Architecture (LVC-IA) connects training aids with mission command systems to enable execution of integrated mission command and maneuver training. The ITE is helping to move the Army to truly integrated solutions that are holistic, persistent (available 24/7) and consistent, yielding lower costs and enhanced training capabilities.

The LVC-IA is being fielded to select Active Component (AC) installations, the first being Fort Hood in 1st quarter, FY2013, and at a rate of roughly one additional location per quarter. With the ITE, units will reach higher levels of proficiency by combining all environments under a common scenario. It will also enable commanders to train collective groups of leaders who have completed pure live training iterations in scenarios and conditions that are not easily replicated or too risky to replicate in home station training environments. To be fully effective, the ITE requires replication of the operational environment at each user's home station.

Regional Collective Training Capability (RCTC)

The RCTC is the Army's current TSS prioritization strategy. This concept sets the required level of capability at specific locations and prioritizes the Army's investment strategy toward those locations. The intent is for RCTC to enable ARFORGEN Unit Proficiency Events and Levels for the AC or Reserve Component (RC). Figure 2-1 below illustrates the RCTC locations worldwide.

Figure 2-1: RCTC Locations

Combat Training Center (CTC) Training



CTCs provide high-fidelity joint and combined arms training based on current Army requirements. It is imperative units are adequately prepared for their CTC certification event, and have the facilities at home station to sustain their readiness level in the "Ready Now" construct.

Regionally Aligned Forces

Designated units are being regionally aligned to add focus, relevance, and complexity to the conditions of training and enhance core competencies of combined arms maneuver and wide area security. Training for decisive action in a complex environment at the upper end of the conflict continuum and training with a regional alignment should be complementary and concurrent efforts, but decisive action readiness is the baseline readiness requirement. This regional alignment affects training land requirements by requiring some units to conduct training events within their supported region. Home station requirements may be offset by this action, while some regions may be additionally strained by this requirement in the future.

Airspace

Airspace is a fundamental dimension to all Army training, whether at the home station or CTC. The Army is adding airspace requirements to its overall land training requirements for Army aviation, unmanned aircraft systems (UAS), and firing ranges.

Other Service Requirements

Other services and federal agencies use Army land to train. The Army does not uniformly incorporate these land requirements into its planning.

SUMMARY

Moving forward, the Army's approach for meeting the readiness requirements of the complex, strategic environment with less resourcing flexibility, will address the three primary requirements outlined at the beginning of this section. The uncertainty of the future, the complexity of the threat, and the necessity to be able to operate across joint and combined arms lines means the Army must increasingly develop the ability to effectively plan and resource training.

2.2 MARINE CORPS

The detail from the Marine Corps' 2012 SRR Special Interest Section remains applicable for this year's report. As such, the focus of this section is to report on any changes in status and to reinforce the criticality of the issues. The Mission Capable Ranges Program provides the Marine Corps with a comprehensive, fully developed range program that defines current, emerging, and future range requirements, and executes range modernization initiatives focused on the needs of the warfighter. Over the past decade, the Marine Corps has invested over \$800 million in ranges. The cornerstone of the program is range modernization through: (1) maintenance of ranges to retain capabilities and protect range investments; (2) re-capitalization to upgrade or replace existing ranges and range resources; and (3) investment in new ranges that leverage advanced instrumentation, targets, and training systems. Range modernization requires a substantial, ongoing commitment of resources to address each of these categories. In the near term, investment in new ranges will likely be severely constrained due to a lack of funding. Without sufficient commitments focused, at a minimum, on maintenance and re-capitalization, today's range capabilities will become tomorrow's liabilities, with adverse effects on the ability of our installations to support required training with mission-capable ranges.

The Mission Capable Ranges Program supports the Commandant of the Marine Corps' Vision and Strategy 2025 Initiative. Vision and Strategy 2025 advances the post-Operation Enduring Freedom requirement to train scalable Marine Air-Ground Task Forces (MAGTFs) and their component units to meet an expanding number of essential missions. This expanding spectrum of training requirements will increase demand for ranges to support multiple training missions, leading to more

intensive use of installations. At the same time, the reality that the battlespace of the 21st century is measured in vast distances covered rapidly by highly capable forces increases the demand for extensive training areas and airspace that exceed the limitations of a single installation. As Marine Corps forces return to their home stations from contingency operations, the training load on bases will increase. More intensive and extensive training demands on installations are to be expected notwithstanding reductions in the size of the force; any decrease in range demands due to force reductions will be more than offset by expansion in the spectrum of training requirements and the increase in overall training area necessary to execute them. In summary, in the future Marine Corps installations will be required to support training of Marines and Marine Corps units in an expanding array of mission-essential tasks that require ever-increasing amounts of training space and increasingly sophisticated range resources. The subsections below highlight those issues critical to capabilities and encroachment.

CRITICAL ISSUES: RANGE CAPABILITIES

The Marine Corps has identified Service-level deficits in its ability to train to the many missions that it faces. Continued analysis and the fielding of new systems may cause other requirements to surface in the future, but today the projected operational range requirements at the Service-level focus on the following four critical deficiencies:

1. Marine Corps ranges presently lack the capability to fully exercise a large MAGTF in a realistic, doctrinally appropriate training scenario. The premiere Marine Corps Air Ground Combat Center (MCAGCC) at Twentynine Palms is the center of excellence for developing and executing combined arms live-fire training of a MAGTF; however, MCAGCC cannot accommodate a full-scale, live-fire Marine Expeditionary Brigade (MEB) exercise. The Marine Corps is pursuing expansion of the MCAGCC/Marine Air-Ground Task Force Training Center (MAGTFTC) that would significantly enhance the Marine Corps' ability to continue providing trained Marines, Marine units, and MAGTFs in furthering national security objectives. On 11 February 2013, the Marine Corps issued the Record of Decision selecting its preferred alternative for adding approximately 150,000 acres of Johnson Valley

to Twentynine Palms. Having completed the NEPA process and obtained the necessary authorizations from DoD, the Marine Corps, in conjunction with BLM, is currently pursuing land withdrawal legislation from Congress. The Marine Corps is asking Congress to authorize the land withdrawal as part of the 2014 NDAA. Once the Marine Corps has control of the land, it can then pursue establishing the additional airspace needed for MEB-level exercise.

2. Inadequate training opportunities exist for the Marine units stationed in the Western Pacific and Hawai'i. Marine Corps installations in Hawai'i lack sufficient range capabilities to fully support training of units stationed there. These units therefore train extensively on other Military Service facilities, particularly Army ranges in Hawai'i. The Marine Corps is in the process of assessing approaches to the challenging issue of mitigating range shortfalls within Hawai'i. The initiative to relocate units from Okinawa to Guam and develop training ranges and infrastructure on Guam and selected islands of the Commonwealth of the Northern Mariana Islands may provide additional training opportunities for Marines stationed in Okinawa and the Hawaiian Islands. Efforts to establish training opportunities in Australia are also underway to address Western Pacific units' training area shortfalls.
3. The Marine Corps has identified the need for an aviation training range on the East Coast of the United States with range capabilities such as those provided by Marine Corps Air Station (MCAS) Yuma on the West Coast. To address this requirement, the Marine Corps has assessed potential alternatives, including expanding the Townsend Range. Based on preliminary analysis, the Marine Corps determined that this expansion is feasible, and that additional assessment and analysis were warranted. A Draft Environmental Impact Statement for the Proposed Modernization and Expansion of Townsend Bombing Range was published for public comment in July 2012. Assessing possible courses of action, including Townsend Range expansion, will continue in FY2013.
4. As affirmed in Vision and Strategy 2025, the capability to fight from the sea and to operate within the littorals is a core Marine Corps competency. The Marine Corps is committed

to preserving and enhancing the capabilities of its primary amphibious training bases at Camp Pendleton and Camp Lejeune, and to developing opportunities for increased littoral training in Hawai'i. These installations lack fully developed maneuver corridors, training areas, and airspace to adequately support ground and air maneuver inland from landing beaches. Addressing these deficits is a priority.

The Mission Capable Ranges Program is also focused on developing aviation training on ranges and enhancing access to training airspace, in addition to expanding Townsend and special use airspace at MCAGCC. In particular, the Marine Corps is engaged in developing airspace access, landing zones, and range support requirements to accommodate MV-22 Osprey and unmanned aircraft system (UAS) capabilities, and in determining range and airspace needs for the Joint Strike Fighter (JSF). Mission Capable Ranges is also increasing its emphasis on supporting implementation of advanced training technologies for LVC environments, to the extent feasible given fiscal constraints. Training technologies have the capability to substantially increase the training value provided by ranges, and to enhance the realism of virtual and constructive training. Implementing advanced training technologies is a critical component of range modernization.

CRITICAL ISSUES: ENCROACHMENT

Encroachment that constrains the use of Marine Corps installations for realistic military training remains a significant concern. Continued population growth, increased levels of environmental regulation, and expanding development in the regions that are home to Marine Corps installations generate pressure on scarce resources (land, airspace, seaspace, frequency spectrum) that are critical to current and future military training, testing, and general mission activities. The Marine Corps programmatically assesses and addresses encroachment issues.

The primary encroachment at Marine Corps range complexes includes impacts to training from threatened and endangered species, restrictions on allowed munitions, degraded access to the frequency spectrum, noise-based restrictions on training, incompatible adjacent land use, and renewable energy such as wind and solar farms. Encroachment also threatens Marine Corps

installations that do not provide significant range resources, but which are home to operational forces that utilize nearby training areas. Encroachment at these installations also affects training and mission readiness. For example, urban growth and land uses and airspace congestion adjacent to Marine Corps air stations' ranges present particular concerns, with potential or actual impacts on military aviation activities.

Managing significant sources of encroachment to minimize impacts on training, while complying with applicable regulations, requires a substantial commitment of resources. The Marine Corps continues to address all areas of encroachment aggressively with focused programs. Nevertheless, the Marine Corps remains concerned that encroachment continues to present a substantial threat to the capability of installations and the operational forces they support to perform their military missions.

2.3 NAVY

The detail from the 2012 SRR Navy Special Interest Section remains applicable for this year's report. As such, the focus of this section is to provide any change in status and to reinforce the criticality of the issues.

While the range capability issues presented in the 2012 SRR remain applicable, there are significant new and ongoing encroachment challenges facing Navy training ranges. Navy leadership has been focused on the following issues:

- ▶ Mitigating energy development issues that potentially degrade training quality, impact testing capabilities, or limit tactical maneuver. While the Navy's commitment to the nation's energy goals and conventional/renewable energy development projects remain the same, energy interests are exerting sustained pressure on training and testing space availability.
- ▶ The Navy is experiencing encroachment pressures from proposed renewable energy development near Patuxent River, MD, Chesapeake, VA, Boardman, OR, and China Lake, CA. The Navy intends to identify these areas as being at a high risk of adverse impact to national security from wind projects near these ranges or facilities in 2013.
- ▶ FCC initiatives to re-allocate military frequency spectrum bands for civilian and

commercial use in support of the National Broadband Plan directly impact the Navy's use of the frequency spectrum to test, train, and operate.

- ▶ The invasive nature of ocean observing systems is a threat to the security of tactics, techniques, and procedures training on at sea ranges.
- ▶ Increased maritime commercial activity and large vessel deep water requirements threaten offshore range access and tactical maneuver due to port access re-routing, traffic separation schemes, and navigation safety issues.

These challenges are discussed in greater detail in the following subsections.

ALTERNATIVE ENERGY DEVELOPMENT, WIND FARMS

The Navy is working to mitigate the effects of conventional and renewable energy exploration and exploitation. The Navy will continue to participate in the DoD Siting Clearinghouse which serves as a single DoD point of contact for all civil or non-governmental entities to determine renewable energy project impacts to Navy readiness interests. In the case of offshore wind energy project proposals, close coordination with USD(P&R) and Bureau of Ocean Energy Management (BOEM) and individual state offshore energy task forces continue to pay dividends in establishing compatibility between range training requirements and energy interests.

The Navy's success engaging with civil/commercial interests relies upon detailed proposal descriptions and open discussions of specific military operational limitations in an iterative process with energy stakeholders so actionable feedback is generated for both parties. The more detailed and complete the energy proposal from commercial developers, the more accurate and comprehensive the Navy's impact assessment will be on Military Service interests, such as installations, ranges, and specific capabilities. While the Navy has had success with wind farm developers near Naval Air Station (NAS) Kingsville and NAS Corpus Christi, mitigation of the effects to readiness may not always be possible. Proposed renewable energy development near Navy assets at Patuxent River, MD, Chesapeake, VA, Boardman, OR, and China Lake, CA could cause significant degradation to the Navy mission, and it is unclear if

mitigation efforts can eliminate the potential impacts to Navy readiness.

FREQUENCY SPECTRUM USE COMPETITION THE NATIONAL BROADBAND PLAN

Demand for use of the electromagnetic spectrum is increasing, both commercially and within DoD. In March 2010, the FCC introduced the National Broadband Plan to Congress. In June 2010, the Administration released a memorandum, “Unleashing the Wireless Broadband Revolution,” directing the identification of 500 MHz of new spectrum for this expansion, without impacting existing and planned federal capabilities. Soon after, the National Telecommunications and Information Administration (NTIA) introduced specific reallocation proposals for 11 federal frequency bands to support the FCC plan to connect 100 million homes in the next 10 years with broadband under the National Broadband Plan. The portion of the electromagnetic spectrum targeted by the commercial wireless industry (below 3 GHz) is heavily encumbered with existing users, including hundreds of operational military units. Relocating these users to other portions of the spectrum is a complicated, expensive, and time-consuming process. It is imperative that the Navy remain fully engaged in the military spectrum reallocation discussions.

To date, the Navy has completed three assessments:

- ▶ Fast Track Report (1675–1710 MHz, 1755–1780 MHz, 3500–3650 MHz, and 4200–4220 MHz, 4380–4400 MHz), dated 15 November 2010
- ▶ An Assessment of the Viability of Accommodating Wireless Broadband in the 1755–1850 MHz Band, dated 27 March 2012
- ▶ U.S. Navy Initial Response on the 5 GHz National Broadband Plan Assessment, dated 16 May 2012

These studies indicate that there could be significant operational impacts to Navy systems. One of the consolidated studies from NTIA concluded that it will take almost \$18 billion and more than 10 years to vacate most (not all) federal operations from 1755–1850 MHz (http://www.ntia.doc.gov/files/ntia/publications/ntia_1755_1850_mhz_report_march2012.pdf).

Several critical Navy range capabilities are directly challenged by the broadband initiative. The first is the employment of modern combat

weapon systems within an electronic warfare (EW) threat representative environment. Today’s military frequency band allocation supports training with weapon sensors and targeting systems, instrumented range monitoring and recording systems, and threat replicated EW defense systems (i.e., surface-to-air missile radars, communication jammers). Training within a robust EW environment saturated with offensive and defensive weapon systems poses unique weapon system deconfliction challenges similar to what is experienced in modern conflicts and ensures the greatest fidelity for realistic training. These systems require DoD managed and controlled frequency bands to support military units during live training. Numerous spectrum bands, utilized by the Navy and other defense agencies, are increasingly encroached upon for use by non-DoD organizations.

Another critical capability potentially impacted at Navy instrumented training range complexes is the proposed loss of spectrum that supports employment of the Tactical Combat Training System (TCTS), an instrumented aerial and surface tracking system needed for minute-by-minute operation, playback and assessment of recorded multi-participant training evolutions. The reallocation of the TCTS frequency band (1755–1850 MHz) is under in the NTIA 10-year assessment plan that supports the National Broadband Plan. The Navy plans on increasing its LVC (sensor stimulator) concept of operation, which will place additional demand on this spectrum. The 1755–1850 frequency band used by fourth generation platforms such as the F-18, will also be used by the F-35 supporting live training.

Aeronautical mobile telemetry (AMT) is the third capability that is potentially impacted at ranges from spectrum repurposing. AMT systems operate from manned aircraft, unmanned vehicles, aerostats, missiles, or other platforms to provide real-time flight characteristics from the airborne vehicles to the ground, real-time video of cockpit or project information, real-time monitoring of flight research/test parameters, and real-time command and control of the vehicle.

The use of UAS has grown significantly with deployment of more sophisticated payloads for expanded functions of law enforcement, communications relay, firefighting, science observation, and search and rescue. The specific UAS under study in the 1755–1850 MHz band are

small UAS, some of which are small enough to carry in a backpack and for a single person to launch and operate. Many of these systems require wide bandwidths.

The potential for harmful interference exists for several satellite systems. Interference to meteorological satellites (METSAT) is being assessed across the 1675–1710 MHz band, and the potential for harmful interference to and from DoD’s Space Ground Link Subsystem satellite command and control links is being assessed across the entire 1755–1850 MHz band.

If the 1755–1850 MHz band is not protected, existing capabilities as discussed above, as well as emerging capabilities such as secure LVC enablers will be lost, seriously impacting the training superiority established through instrumented training.

PROLIFERATION OF OCEAN OBSERVING SYSTEMS (OOS)

The motivation for the majority of OOS is marine mammal and weather research, climate research, tsunami warning/verification, and seismic/earthquake monitoring. The littoral nature of Navy training ranges and the unique types of activity that occur there make the ranges valuable for data gathering in each of those categories. The open nature of the high seas makes it possible for data to be gathered under innocent circumstances, but ultimately be exploited as an operational vulnerability.

Where Navy range complexes are encroached on by OOS, Navy and national security interests are threatened. The three training ranges of immediate concern are: (1) the Northwest Training Range Complex, (2) the Southern California Offshore Range (SOCAL), and (3) Hawai’i Range Complex. In the future, the east coast Shallow Water Training Range will be vulnerable to the same threat.

Legitimate protection of all Navy national security interests would require controlling access to all marine monitoring, the majority of which is funded by non-DoD or international entities. This universal approach is not practicable. However, the Navy has created an OOS Notification Office and Situational Awareness Office to improve knowledge about systems entering the water. Through these efforts, the Navy continues to consider means of protecting sensitive information that would benefit from improved Navy’s awareness of when and where sensors are placed in operation. Given the

significance of placing OOSs in the vicinity of Navy training ranges, a process of required notification of planned OOS placement would assist in the continuing effort to balance national security concerns with academic and commercial interests. The Navy will continue cooperation and consultation with civilian agencies, foreign navies, academic institutions, and industry to build on current agreements and allow for additional negotiated agreements as appropriate on the placement of sensors and shared data management.

The Navy’s priority is to build and sustain combat skills and readiness. The Navy’s objective via training range capabilities is to sustain realistic training environments and space for freedom of tactical maneuver. When either of those objectives is threatened, the Navy will work to achieve a mitigated solution that preserves security of operations and training capabilities, but will not compromise the ability to survive and prevail in combat.

SEASPACE ENCROACHMENT/PORT ACCESS ROUTING

In the Atlantic area of responsibility, impacts from offshore energy development and anticipated increases in vessel traffic and ship size from Panama Canal improvements may affect continued access to traditionally scheduled seaspace adjacent to fleet concentration areas.

Local maritime agencies recently recommended re-routing a traffic separation scheme through the eastern portion of NAVSEA’s Norfolk Shipboard Electronic Systems Evaluation Facility (SESEF) range, affecting military testing and training. Located in the vicinity of Chesapeake Light, SESEF supports both U.S. Navy and U.S. Coast Guard requirements. Stand-off distance and freedom of movement are critical to safely navigate and accurately complete SESEF instrumented events. In nearby seaspace, efforts are underway to modify a portion of the surface danger zone frequented by U. S. Fleet Forces units east of Dam Neck, VA as a result of local port authority requests for navigation routing improvements. Both of these scenarios highlight the primary and second-order effects posed by the changes to maritime activities, and measures either into or adjacent to seaspace required for combat test and training.

To anticipate potential impacts to mission, the Navy must remain an active participant in consultations and planning related to potential

changes to transit routes and shipping corridors. The fleet continues to work closely with BOEM, U.S. Coast Guard, and maritime agencies to help mitigate impacts to test and training activities as evidenced by Navy input and participation in the U.S. Coast Guard's Atlantic Coast Port Access Route Study.

2.4 AIR FORCE

The detail from the Air Force's 2012 SRR Special Interest Section remains applicable for this year's report. The focus for 2013 is on six priorities that are critical to ensuring the viability of Air Force range infrastructure:

- ▶ Posturing for the new Defense Strategy
- ▶ Enhancing capabilities to support 5th generation aircraft and associated weapons
- ▶ Fostering compatible development
- ▶ Integrating Space and Cyber capabilities
- ▶ Institutionalizing Air Force Special Forces range requirements
- ▶ Reducing range congestion and maximizing capacity through better business practices and innovative partnerships

The Air Force Test and Training Range enterprise consists of Major Range and Test Facility Bases (MRTFB) and Primary Training Ranges (PTRs). The MRTFB encompasses the largest most fully equipped ranges whose primary mission is to provide Test and Evaluation capabilities to support the DoD acquisition system. The MRTFB ranges also support operational training as capacity allows. The PTRs are typically smaller, lesser-equipped ranges whose primary mission is to support the routine continuation training of combat units. These ranges are comprised of over seven million acres of land, one million cubic miles of special use airspace, and an extensive array of equipment to support test and training.

The Air Force views the MRTFBs as irreplaceable national assets and the PTR enterprise as an indispensable component of combat readiness. By January 2014, the Air Force will publish the 2025 Air Test and Training Range Enhancement Plan. This master plan will describe the Air Force strategy to address the six priorities detailed in this section.

POSTURING FOR THE NEW DEFENSE STRATEGY

For more than 20 years, the Air Force conducted combat and combat support missions in the U.S. Central Command Area of Responsibility. For the last decade, the Air Force has been heavily engaged in Operation Iraqi Freedom and Operation Enduring Freedom. The Air Force range enterprise adapted to the demands of these conflicts and evolved rapidly to supply a training environment consistent with the demands of operations in Iraq and Afghanistan. The Air Force enterprise also focused on desert and mountainous terrain, the creation of urban terrain complexes, and the incorporation of low-tech targets and simulated threats.

The new Defense Strategy requires re-focusing for operations against a more technologically advanced adversary. These potential adversaries possess complex air defenses and highly sophisticated electronic countermeasures, including GPS and radar jamming capabilities. To provide the realistic training required for combat ready aircrews, Air Force ranges must upgrade range infrastructure to accurately reflect the complex, dense combat environment that crews will likely encounter operationally. These upgrades include realistic integrated air defenses, high-fidelity moving targets, and the ability to conduct operations in a congested/ degraded environment.

During the next year, the Air Force will develop the 2025 Air Test and Training Range Enhancement Plan. This plan will detail an investment strategy to acquire the advanced technology necessary to provide a training arena that adequately represents the current technology of potential adversaries. The plan will also leverage current efforts in LVC technology to provide threat simulation and increased density where appropriate.

ENHANCING CAPABILITIES TO SUPPORT 5TH GENERATION AIRCRAFT AND ASSOCIATED WEAPONS

The technological advances incorporated in 5th generation aircraft and associated weapons represent an unprecedented leap in combat capability. These advances allow crews to identify and engage multiple targets from greater distances with improved accuracy. The technology of precision-guided munitions has generally shifted the focus of training from weapon employment to

target identification, subsequently increasing the complexity of the targets required to accomplish realistic training. The greater employment distances of these weapon systems add another stressor to range management as individual sorties require larger portions of the range to train safely and effectively.

The Air Force must invest wisely in the range enterprise to provide an arena capable of testing these complex weapons and training aircrews to employ them effectively.

FOSTERING COMPATIBLE DEVELOPMENT

The competing national priorities of energy independence, nationwide broadband and a strong defense often manifest themselves on Air Force ranges. The geographic boundaries of these ranges were defined decades ago and designed to place hazardous activity in locations with little impact to the general populace. As the nation seeks energy independence, these once isolated test and training ranges are often in the midst of prime development areas for renewable energy. The traits that make them ideally suited for Air Force Test and Training are also valued by solar and wind energy developers. The resulting development outside of range boundaries occasionally has the potential to degrade the capability to effectively test and train inside the range boundaries. This is particularly evident when the Doppler effect from wind turbines off-range affects the accuracy and reliability of radar systems used on the range.

An emerging challenge on ranges is the increased competition for frequency spectrum. Air Force ranges and the weapon systems that operate on them are equipped with a vast array of advanced electronic equipment. These devices rely on the availability of specific, pristine frequency bands to relay test data, monitor training, and facilitate digital communication between airborne assets and ground stations. Some of these systems are assigned to frequencies located in bands currently under consideration for auction to commercial entities potentially impacting test and training capability.

The Air Force is proactively engaged with the Office of the Secretary of Defense (OSD), other Military Services, interagency partners and industry to address the demands of compatible development. Through the DoD Siting Clearinghouse, the Air Force responds to renewable energy development proposals, works

with developers to mitigate any operational impacts, and objects to projects when mitigation is not possible. Likewise, the Air Force is also participating in the Commerce Spectrum Management Advisory Committee Working Group, a collaborative effort between government and industry, to explore innovative solutions to the spectrum congestion challenges.

In some circumstances, the Air Force identifies specific parcels of off-range land, that if developed incompatibly, would adversely affect range operations. Concerns are site-specific but often include wind turbine impacts to radar, the impact of excessive lighting on Night Vision Device training, and urban development near safety zones or high-noise impact areas. In these circumstances, the Air Force uses the Readiness and Environmental Protection Initiative (REPI) program to promote compatible use. In 2011, the Air Force list of REPI projects included three initiatives designed to preserve lands surrounding Air Force ranges. The first of these initiatives involves four separate parcels of land totaling 11,414 acres near the Avon Park Range in Florida. Restrictive easements on these lands will protect approach/departure corridors, provide an adequate noise buffer, and limit lighting that could interfere with Night Vision Device training. A second initiative involves 1,291 acres of undeveloped land in North Carolina near the Dare County Bombing Range. Easements on this land will preserve access to restricted airspace and training routes critical to range operations. The third initiative seeks to preserve 1,280 acres adjacent to the Eglin Range in Florida to protect low-level approaches for Joint Strike Fighter operations.

As training requirements evolve, the Air Force will annually review land use concerns. Any parcels of land identified as critical to preserving operational capabilities will be vetted by the REPI process.

INCORPORATING SPACE AND CYBER CAPABILITIES

Full spectrum Air Force operations increasingly involve space and cyber capabilities; however, the ability to conduct integrated training does not match the increasing importance of space and cyber capability. Air Force operations rely on integrated air, space, and cyber capabilities, and therefore training arenas must evolve to incorporate full spectrum training. The Air Force

took a critical step in integrating capabilities this year by moving responsibilities for the Space Test and Training Range to the Nevada Test and Training Range and Air Combat Command. This move facilitates the ability to incorporate space operations into major, large-scale training exercises.

INSTITUTIONALIZING AIR FORCE SPECIAL FORCES RANGE REQUIREMENTS

Air Force test and training ranges have historically been used for the development of aircrews and airborne systems. Just as recent operations gave prominence to space and cyber forces, they also highlighted the critical need to integrate Special Forces and Battlefield Airmen. These forces, to include ground units, operate much differently than traditional Air Forces, but they require the same access to realistic training arenas. Historically, these combat units have relied on an ad-hoc relationship with ranges to accomplish their training needs. The Air Force is currently working to better define and institutionalize the training space requirements for both Special Forces and Battlefield Airmen. Once these requirements are finalized, the Air Force will designate and fund specific ranges to meet those requirements. This approach will allow the maximum return on investment for range funds and will provide a stable training environment for those unique and essential capabilities.

REDUCING RANGE CONGESTION AND MAXIMIZING CAPACITY THROUGH BETTER PRACTICES AND INNOVATIVE PARTNERSHIPS

Congestion on Air Forces ranges, especially within the MRTFB, has increased in recent years due in part to increased operations and the need for larger volumes of restricted airspace. In 2012 the Air Force mandated the use of Center Schedule Enterprise (CSE) as a common scheduling system across all ranges and airspace. This dynamic system enables range operators to more effectively and efficiently schedule training events in a given volume and time available, thus maximizing available range capacity. The system also allows aircrews from different units to review schedule across the enterprise, optimize training, and coordinate synergistic training events when available.

Additionally, the Air Force is working with local communities and civil aviation organizations to optimize airspace use and to move select, non-

hazardous training off ranges. The highly successful Gulf Regional Airspace Strategic Initiative (GRASI) provides a mechanism to relieve air traffic congestion in Northwest Florida while enabling test and training activity on the Eglin range. This initiative illustrates the value collaborative partnerships of this nature bring to all stakeholders. The Air Force continues to leverage this collaborative process to identify non-DoD lands that could be jointly used for non-hazardous military training and conservation efforts.

The Air Force is also supporting the Federal Aviation Administration (FAA) as they integrate Remotely Piloted Aircraft into the National Airspace System. As forces redeploy from the current conflicts, returning Remotely Piloted Aircraft will train more frequently in domestic airspace. Allowing these aircraft to conduct non-hazardous operations outside of segregated airspace will open more range time for hazardous test and training missions that require range access, thus alleviating some congestion.

The new Defense Strategy, with the fielding of 5th generation aircraft and an increased emphasis on space, cyber, and Special Forces will drive future priorities and investment for the Air Force range enterprise. While addressing these priorities, the Air Force must remain cognizant of other national priorities, such as renewable energy goals and a national broadband infrastructure, while exploring cooperative land-use strategies to reduce congestion on stressed ranges. These challenges are immense but not insurmountable. Innovative partnerships, established processes, better practices, and improvements in LVC technology will enable the Air Force to meet test and training requirements while simultaneously supporting additional national priorities. The Air Force will expand upon these and other opportunities during the development of the 2025 Air Test and Training Range Enhancement Plan.

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ADEQUACY OF EXISTING RANGE RESOURCES FOR MEETING TRAINING REQUIREMENTS

As stated in Chapter 1 of this SRR, USD(P&R) and the Military Services validated the 2012 range assessments as current for the 2013 reporting period. USD(P&R) intends to conduct a full evaluation of range capabilities and the adequacy of ranges to provide the required training support and current impacts of encroachment every three years. The next range assessment review will be included as part of the 2015 SRR to Congress.

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DOD'S COMPREHENSIVE TRAINING RANGE SUSTAINMENT PLAN

NDAA Section 366(a)(1) requires DoD to develop a comprehensive training range sustainment plan. DoD has established a complete range planning and management program under its SRI that addresses this requirement. The SRI is a multi-faceted program that has reorganized the way DoD identifies and responds to increasing constraints on realistic training. The SRI focuses directly on training, policy, people, and resource needs by employing the concept of sustainability as a guiding principle. DoD has reinvigorated existing relationships and initiated new collaborative partnering and outreach efforts with a wide array of stakeholders, including communities surrounding its ranges and installations; state and federal regulatory, planning, and infrastructure agencies; American Indian tribes; and non-governmental organizations (NGOs).

The SRI provides a flexible and adaptive planning framework that guides continuing, cooperative, and coordinated range sustainment efforts between DoD and the Military Services as well as mechanisms that facilitate interaction with local, state, regional, and other federal agencies and NGOs. The program includes an array of policy, organizational, programming, outreach, legislative, and related efforts to address near-term training requirements and long-term range and installation sustainability. This broad-based framework:

- ▶ Describes individual and joint range requirements and needs
- ▶ Identifies Military Service-specific and DoD-wide encroachment and range sustainability issues
- ▶ Evaluates the availability, accessibility, and usability of existing range resources
- ▶ Develops overarching program goals, articulates the actions and activities necessary

to achieve them, and establishes milestones to validate progress

- ▶ Initiates legislative, regulatory, and outreach program activities, as required

This chapter of the 2013 SRR builds upon the information from the 2012 SRR and highlights key aspects to meet NDAA Sections 366(a)(4)(c) requirements to report on sustainable range initiatives.

4.1 GOALS AND MILESTONES

DoD has used a set of shared goals and milestones since the 2006 SRR. The 2010 SRR updated those original goals to mirror the seven focus areas established by the Overarching Integrated Product Team, the Principal-level DoD working group chartered with directing the Department's efforts to address encroachment to ensure the long-term sustainability of operational ranges and other DoD assets required to maintain force readiness.

Using these goals as a common framework, each Military Service developed a set of milestones and actions to achieve common objectives. Tables 4-1 through 4-7 show the current status of each milestone. Based on annual assessment data, programmatic goals and milestones will be reviewed and updated annually to ensure the SRI continues to effectively address potential future training requirements and constraints.

Table 4-1: Encroachment Actions and Milestones—Goal: Mitigate Encroachment Pressures on Training Activities from Competing Operating Space (Landspace, Airspace, Seospace, and Cyber Issues)

ARMY

ACTIONS	MILESTONES	STATUS	ADDITIONAL SERVICE COMMENT
Review and maintain Installation Range Complex Master Plans (RCMPs).	<ul style="list-style-type: none"> Review and update RCMPs annually for required installations. 	Updated; ongoing	100% of required installation RCMPs were updated and approved in 4th Quarter FY2012.
Execute the Army Compatible Use Buffer (ACUB) Zone Program to protect the military mission and offset training restrictions.	<ul style="list-style-type: none"> Implement ACUBs at installations to protect training, testing, and operations from encroachment effects, permanently protecting acreage of land from incompatible land uses. Continue programming validated environmental requirements to support ACUBs during POM 2015–2019. 	Updated; ongoing	As of 2012, ACUBs have been implemented at 30 locations and more than 160,000 acres of land have been protected from incompatible use.
	<ul style="list-style-type: none"> Document a consistent and clearly defined ACUB strategy, including metrics for program success and prioritization measures by 4th Quarter FY2011. 	Completed	Following the finalization of the Army Audit Agency (AAA) of the ACUB Program; implementation guidance was issued (2nd Quarter FY2012).
	<ul style="list-style-type: none"> Continue development of a consistent and clearly defined ACUB strategy, including metrics for program success and prioritization measures that builds from the ACUB Implementation Guidance issued in FY2012. 	New	The ACUB strategy is a continuous follow-on effort to ensure synchronization with Army strategies and mission priorities.
	<ul style="list-style-type: none"> Document a consistent and clearly defined ACUB strategy, including metrics for program success and prioritization measures by 4th Quarter FY11. 	Completed	Following the finalization of the Army Audit Agency (AAA) audit of the ACUB Program, implementation guidance was issued (2nd Quarter FY2012).
	<ul style="list-style-type: none"> Program validated environmental requirements to support ACUBs during POM 2014–2018. 	Completed	
	<ul style="list-style-type: none"> Program validated environmental requirements to support ACUBs during POM 2013–2017. 	Completed	
Implement a focused community research process to: provide the Army with a research-based understanding of community views regarding operational and perceived impacts of Army installations and training activities; and demonstrate an interest in public opinions, making the public part of the decision-making process.	Complete two additional installation community research efforts by 4th Quarter FY2012.	Partially completed	Due to funding shortfalls, the only community research effort conducted in 2012, was for South Texas Training Site (National Guard Bureau).
	Draft and implement an ongoing strategy to continually update community research findings at major training installations by 3rd Quarter FY2013.	Updated; ongoing	The timeline for drafting and implementing this strategy was 3rd Quarter FY2012; however, funding for strategy development was not available until late in FY2012, therefore the strategy is under development and is anticipated to be finalized by 2nd Quarter FY2013.
Execute State Legislative Initiatives.	Conduct reviews with stakeholders, through the Army’s Regional Environmental Coordinators to discuss adverse impacts of incompatible land uses near military installations and gain their support to address these issues.	Ongoing	

Table 4-1: Encroachment Actions and Milestones—Goal: Mitigate Encroachment Pressures on Training Activities from Competing Operating Space (Landscape, Airspace, Seespace, and Cyber Issues)

MARINE CORPS

ACTIONS	MILESTONES	STATUS	ADDITIONAL SERVICE COMMENT
<p>Continue to analyze and assess encroachment, quantitatively and qualitatively, at the installation, regional, and Service levels.</p>	Include encroachment analysis in Regional RCMPs.	Ongoing	Details are included by region.
	▶ Marine Corps Installations—West (MCIWEST)	Completed	Completed FY2012.
	▶ MCIEAST	Ongoing	Initiated FY2012. Regional encroachment assessments will be executed primarily through the ongoing ECP Program.
	▶ MCIPAC	Planned	Initiation of an MCIPAC RCMP is dependent on developments in planning for the region including potential re-basing initiatives (Okinawa-Guam-Hawai'i).
	Execute Encroachment Control Plans (ECPs).	Ongoing	See below for ECP status.
	<p>ECPs completed:</p> <ul style="list-style-type: none"> ▶ Marine Corps Air Station (MCAS) Yuma ▶ Marine Corps Air Ground Combat Center (MCAGCC) Twentynine Palms ▶ MCAS Cherry Point ▶ MCAS Beaufort/Townsend Range ▶ Marine Corps Base (MCB) Camp Lejeune/MCAS New River ▶ Blount Island Command ▶ MCLB Albany ▶ Combined ECP for Southern California Installations (MCB Camp Pendleton, MCAS Camp Pendleton, MCAS Miramar, MCRD San Diego) ▶ Joint (Navy/Marine Corps) Guam ▶ MCB Hawai'i ▶ MCB Quantico 	Complete	
	<p>ECPs ongoing:</p> <ul style="list-style-type: none"> ▶ Marine Corps Mountain Warfare Training Center (MCMWTC) Bridgeport ▶ MCLB Barstow 	Ongoing	MCLB Barstow and MCMWTC Bridgeport ECPs initiated FY2012; MCB Quantico ECP expected completion in FY2013.
	<p>Facilitate/support regional inter-agency and inter-governmental partnerships:</p> <ul style="list-style-type: none"> ▶ Western Regional Partnership ▶ Southeast Regional Partnership for Planning and Sustainability 	Ongoing	

Table 4-1: Encroachment Actions and Milestones—Goal: Mitigate Encroachment Pressures on Training Activities from Competing Operating Space (Landscape, Airspace, Seospace, and Cyber Issues) (Continued)

MARINE CORPS

ACTIONS	MILESTONES	STATUS	ADDITIONAL SERVICE COMMENT
Continue to evaluate, plan for, and execute encroachment partnering opportunities per 10 U.S.C. § 2684a.	Execute buffer lands acquisition.		Partnership participation continues in ongoing regional inter-agency coordination, in furtherance of the objectives of the REPI program, and in coordination with the WRP and SERPPAS initiative.
	MCINCR: ▶ Quantico (416 acres [ac.]) MCIEAST: ▶ MCAS Beaufort (3128 ac) ▶ Townsend Range (22,841 ac) ▶ MCAS Cherry Point/Piney Island Range (5,055 ac) ▶ Camp Lejeune (2,337 ac) MCIWEST: ▶ Camp Pendleton (1,681 ac) ▶ Twentynine Palms (958 ac)	Complete	Continuing to identify additional opportunities to execute encroachment partnering projects in support of installation missions.
	▶ Initiated partnership with U.S. Fish and Wildlife Service and State of North Carolina to manage endangered species on acquired buffer land to increase species population off-base to reduce training restrictions on-base.	Ongoing	
	▶ Evaluate opportunities in all Continental United States MCI regions.	Ongoing	Prospective encroachment partnering and “buffer lands” partnership opportunities are identified and assessed at the local installation level, reviewed and validated at the regional level, and submitted to Marine Corps Installations Command (MCICOM) headquarters for validation and prioritization, fiscal planning, and DoD coordination. Validated opportunities are programmed for execution over the FYDP consistent with available funding.

NAVY

ACTIONS	MILESTONES	STATUS	ADDITIONAL SERVICE COMMENT
Employ proactive interaction with all Services to sustain installation and range capabilities.	▶ Build on the successful proof of concept exercises conducted by Naval Special Warfare Command (NSWC) on the USMC Chocolate Mountain Aerial Gunnery Range.	Updated	
	▶ NSWC and TECOM collaborate to redesign and redesignate range space to maximize training capability within allowable range space by FY2013.		
Continue to analyze and assess encroachment, quantitatively and qualitatively at the installation and regional levels.	▶ Update Encroachment Action Plans (EAPs) as required and continue assessing encroachment pressures and their impacts on the same Navy training ranges using parallel processes by FY2014.	Ongoing	
	▶ Utilize and develop the Navy Community Liaison and Plans Officer Program to continuously engage communities where the potential encroachment of installations and ranges may arise.	Ongoing	
Continue to evaluate, plan for, and execute partnering opportunities per 10 U.S.C. Section 2684a.	▶ Use existing parallel processes to update applicable EAPs and identify all encroachment partnering opportunities for associated Navy training ranges.	Ongoing	

Table 4-1: Encroachment Actions and Milestones—Goal: Mitigate Encroachment Pressures on Training Activities from Competing Operating Space (Landscape, Airspace, Seaspaces, and Cyber Issues) (Continued)

AIR FORCE

ACTIONS	MILESTONES	STATUS	ADDITIONAL SERVICE COMMENT
<p>Develop the Center Scheduling Enterprise (CSE) system and integrate flight scheduling systems with other scheduling systems.</p>	<ul style="list-style-type: none"> ▶ Modify utilization reports to provide a complete and accurate account of airspace and range usage (FY2011–FY2013). 	Ongoing	Progress continuing into FY2013.
	<ul style="list-style-type: none"> ▶ Use enterprise architecture to institute a streamlined version of CSE (FY2009–FY2013). 	Ongoing	
	<ul style="list-style-type: none"> ▶ Deploy CSE system throughout the Air Force. 	Ongoing	
	<ul style="list-style-type: none"> ▶ Standardize terms, practices, and procedures used for scheduling and utilization reporting at all Air Force ranges to ensure true comparison of assets (FY2012). 	Complete	Completed in FY2012.
	<ul style="list-style-type: none"> ▶ Provide a quantitative basis for defending current requirements and developing future needs. 	Ongoing	
	<ul style="list-style-type: none"> ▶ Develop an interface between CSE and the Army/ Marine Corps Range Facility Management Support System (FY2011–FY2013). 	Ongoing	

Table 4-2: Frequency Spectrum Actions and Milestones—Goal: Mitigate Frequency Spectrum Competition

ARMY

ACTIONS	MILESTONES	STATUS	ADDITIONAL SERVICE COMMENT
Execute an ACUB to protect spectrum at Fort Huachuca, home of the Electronic Proving Ground.	▶ Continue implementing the Fort Huachuca ACUB proposal.	Updated; ongoing	Ongoing subject to the availability of funding. To date approximately 22,000 acres have been conserved and over \$14M in funding has been executed.
	▶ Monitor and assess the ACUB at Fort Huachuca through the biennial review process.	Ongoing	A biennial review was conducted in Summer 2011; the next biennial review is targeted for 2013.
Design new ranges to minimize spectrum competition.	▶ Complete the installation of fiber optic cabling to support a wireless network and control targetry in order to minimize spectrum and interference on ranges by FY2017.	Partially Complete; Ongoing	Fiber was included on 19 FY2012 range construction projects. Fiber is planned for inclusion on 21 FY2013 range construction projects.

MARINE CORPS

ACTIONS	MILESTONES	STATUS	ADDITIONAL SERVICE COMMENT
Analyze and assess frequency spectrum issues potentially impacting training capabilities at range complexes.	▶ Assess operational impacts of frequency encroachment at the range complex level.	Ongoing	Frequency spectrum issues are being incorporated into the MCIWEST and MCIEAST Range Complex Management Plans in range communications studies and addressed in terms of encroachment in ECPs.
	▶ Incorporate frequency spectrum encroachment analysis and potential mitigation measures into planned ECPs; incorporate updates to existing ECPs.	Ongoing	Frequency spectrum issues are being incorporated into the MCIWEST and MCIEAST Range Complex Management Plans in range communications studies, and in terms of encroachment in ECP.

NAVY

ACTIONS	MILESTONES	STATUS	ADDITIONAL SERVICE COMMENT
Analyze and assess frequency spectrum issues potentially impacting training capabilities at the range complex and regional level.	▶ Update the RCMPs and EAPs to identify and assess frequency spectrum conflicts, shortfalls, and the impacts on Navy training as the documents undergo periodic updates.	Updated	
	▶ Advocate for the protection of military frequencies used by range capabilities that could be affected by frequency re-allocation and/or the National Broadband Plan.	Ongoing	Military frequency band 1755–1850 Khz has been assessed for migration costs in terms of time and resources required.

AIR FORCE

ACTIONS	MILESTONES	STATUS	ADDITIONAL SERVICE COMMENT
Improve frequency/spectrum considerations in AF basing decision-making.	▶ Incorporate frequency/spectrum as a key and quantifiable factor in the AF corporate basing process.	Ongoing	Progress continuing into 2013.

Table 4-3: Airspace Actions and Milestones—Goal: Meet Military Airspace Challenges

ARMY

ACTIONS	MILESTONES	STATUS	ADDITIONAL SERVICE COMMENT
Develop an Unmanned Aircraft System (UAS) Army Strategy and define Army use of UAS through 2035.	▶ Program additional facility upgrades of UAS training facilities at 28 locations in POM FY2013–FY2017.	Updated; Ongoing	Programmed facility upgrade requirements were accepted as valid in POM FY2013–FY2017, but not resourced due to funding constraints. Facility upgrade requirements were again accepted as valid in POM FY2014–FY2018, but not resourced due to continued funding constraints.
	▶ Publish the Army's Roadmap for UAS through 2035.	Completed	
	▶ Program sustainment of UAS training facilities at 28 locations in POM FY2012–FY2016.	Completed	Programmed and resourced facility sustainment at 28 locations (20 Active Army; 8 Army National Guard).
Develop an Environmental Assessment (EA) process to facilitate increased access to restricted airspace in support of UAS training.	▶ Initiate two pilot project EAs to adjust special use airspace in support of UAS training at major training and testing installations.	Partially completed	The EA at Fort Bliss (initiated 3rd Quarter FY2011) was completed in FY2012. The EA at Fort Polk (initiated 4th Quarter FY2011) is undergoing final review and is anticipated to be complete by 2nd Quarter FY2013.
	▶ Coordinate with the FAA to complete EAs at Forts Bliss and Polk, and refine the Army's process for training airspace adjustment by 4th Quarter FY2012.	Updated; ongoing	Coordination with FAA is ongoing; FAA is completing a final review of the Fort Polk EA and a response is anticipated in 1st Quarter FY2013; FAA has completed review of the Fort Bliss EA, and Fort Bliss is continuing coordination with FAA on a permit request for additional restricted airspace. The Army will continue working with FAA on training airspace adjustments on a case-by-case basis.
	▶ Complete an Environmental Impact Statement (EIS) at Fort Campbell that includes adjustment of airspace to increase military designated airspace off the western side of the installation to provide an aviation "step-down" area; coordinate this effort with FAA.	New milestone	

MARINE CORPS

ACTIONS	MILESTONES	STATUS	ADDITIONAL SERVICE COMMENT
Define future requirements for military airspace, current and projected airspace shortfalls, and possible courses of action to mitigate shortfalls at installation, range complex, regional, and Service levels.	▶ Include airspace analysis in regional RCMPs.	Ongoing	See Table 4-1 for schedule.
	▶ Assess airspace requirements and shortfalls in preparation of and submission for Regional Airspace Plans (FY2013).	Ongoing	Preparing the Regional Airspace Plans is an annual requirement (OPNAV INST 3770.2K) for Marine Corps Regional Airspace Coordinators.
	▶ Continue airspace expansion planning for Marine Corps Air-Ground Combat Center Twentynine Palms.	Ongoing	The EIS was approved with the signing of the Record of Decision in February 2013. With the finalization of the EIS, additional assessment by FAA of airspace alternatives is expected.
	▶ Continue to track airspace issues and FAA initiatives potentially affecting military activities.	Ongoing	

Table 4-3: Airspace Actions and Milestones—Goal: Meet Military Airspace Challenges (Continued)

NAVY

ACTIONS	MILESTONES	STATUS	ADDITIONAL SERVICE COMMENT
Define future requirements for military airspace, current and projected airspace shortfalls, and possible courses of action to mitigate shortfalls at installation, range complex, and regional and service levels.	<ul style="list-style-type: none"> ▶ Use RCMPs and EAPs to assess future Navy special use airspace requirements based on projected force structure changes/positioning and new weapon systems and missions; recommend possible courses of action consistent with Regional Airspace Plans; identify potential shortfalls in landspace and seaspace for each Navy range complex during the POM process. 	Ongoing	
	<ul style="list-style-type: none"> ▶ Ensure the common aspects of this goal and the goal of addressing “Impacts from New Energy Infrastructure and Renewable Energy Impacts” coordinate with and complement each other. 	Ongoing	
	<ul style="list-style-type: none"> ▶ Employ annual PPBE requirements generation cycle to survey Pacific Fleet, United States Fleet Forces, and range managers to determine airspace needs and initiate action to meet requirements. 	Ongoing	Review and rewrite of RCMPs is underway on a staggered basis. Validated shortfalls in range capabilities will be adjudicated during each POM development.

AIR FORCE

ACTIONS	MILESTONES	STATUS	ADDITIONAL SERVICE COMMENT
Improve airspace considerations on AF basing decision-making.	<ul style="list-style-type: none"> ▶ Incorporate airspace as a key and quantifiable factor in the AF corporate basing process. 	Ongoing	Progress continuing into 2013.
Air Force Guidance on Airspace Management, AFI 13-201.	<ul style="list-style-type: none"> ▶ Develop and publish Air Force Instruction that incorporates recent lessons into official guidance. 	Completed	AFI 13-201 published in August 2012.

Table 4-4: Range Space Actions and Milestones—Goal: Manage Increasing Military Demand for Range Space**ARMY**

ACTIONS	MILESTONES	STATUS	ADDITIONAL SERVICE COMMENT
Field Live, Virtual, Constructive-Integrating Architecture (LVC-IA) to enable the Integrated Training Environment (ITE).	<ul style="list-style-type: none"> Field LVC-IA to 15 Active Component installations supporting the Operational Domain at a rate of one location per quarter, beginning in 1st Quarter FY2013. 	New milestone	LVC-IA was fielded at Fort Hood in 1st Quarter FY2013; four additional locations (Fort Bliss, Fort Campbell, Fort Drum, and Korea) are scheduled for fielding in by the end of FY2013.
Re-validate the Regional Collective Training Capability (RCTC) sites.	<ul style="list-style-type: none"> Review and re-validate the RCTC sites (installations) following stationing announcements anticipated in 2nd Quarter FY2013. 	New milestone	
Enable Joint Pacific Multinational Readiness Capability (JPMRC).	<ul style="list-style-type: none"> Relocate Exportable Training Capability—Instrumentation System (ETC-IS) to USARPAC to enable enhanced home station training in the Pacific by 4th Quarter FY2013. 	New milestone	
Assess overall range capabilities in support of Army Force Generation (ARFORGEN), as part of the Army Training Support System Assessment.	<ul style="list-style-type: none"> Canvass four Continental United States (CONUS) installations to ensure Mission Essential Requirements (MERs) are met for ranges by 1st Quarter FY2011. 	Completed	Completed as part of the Army Training Summit I (2nd Quarter FY2011). Three case-studies of Training Support System (TSS) capabilities, including ranges and training land were conducted to inform the MER—Fort Lewis, WA (Active Component), East-Central Region (Army National Guard), and Fort McCoy, WI (U.S. Army Reserve).
Execute "Theater In-Process Reviews (IPRs)" to review range capabilities against Mission Essential Requirements (MER).	<ul style="list-style-type: none"> Conduct Theater IPR in Europe, CONUS, and Pacific to assess range capabilities to support ARFORGEN during 3rd–4th Quarter FY2011. 	Completed	Pacific IPR was conducted 4th Quarter FY2011; Europe IPR was conducted 1st Quarter FY2012; CONUS IPR was cancelled due to constrained resources.
	<ul style="list-style-type: none"> Apply results from the Theater IPRs to POM 2014–2018. 	Completed	Addressed Theater IPR requirements in POM 2014–2018.
Implement the Army Training Land Strategy (ATLS) to prioritize Army training land investments and provide a framework to address training land shortfalls through land acquisition, compatible use buffering, sustainable management, and use of other federal land.	<ul style="list-style-type: none"> Finalize review and revision of the RTLS by 4th Quarter FY2011. 	Updated; Ongoing	Progress on revising the RTLS was previously delayed due to staffing shortfalls and hiring delays in FY2011; revision is currently underway and will be completed by 3rd Quarter FY2013.
	<ul style="list-style-type: none"> Implement a two-year review and update process for the RTLS once complete. 	Updated; Ongoing	Progress on revising the RTLS was previously delayed due to staffing shortfalls and hiring delays in FY2011; revision is currently underway and will be completed by 3rd Quarter FY2013.
Execute Training Land Acquisitions to offset the nearly 5 million acre shortfall in training land assets.	<ul style="list-style-type: none"> Fort Irwin/National Training Center (NTC), CA—Open the Western and Southern Expansion Areas (WEA and SEA) for training. 	Partially completed	Opening of the WEA has been put on hold (possibly indefinitely) due to significant ongoing delays and costs related to endangered species (desert tortoise) management and mitigation. The SEA was re-opened for collective military training in 3rd Quarter FY2012 (more than six months earlier than previously anticipated).
	<ul style="list-style-type: none"> Fort Polk/Joint Readiness Training Center (JRTC), LA—U.S. Army Corps of Engineers (USACE) complete title work and appraisals of property located in priority expansion areas and initiate formal negotiations with land owners by 2nd Quarter FY2011. 	Partially completed	USACE continues to complete necessary title work and appraisals; negotiations for the first acquisition parcel started in 2nd Quarter FY2011; USACE completed the purchase of two parcels (totaling 13,168 acres) in FY2012; additional offers and closings will occur during FY2013.
	<ul style="list-style-type: none"> South Texas Training Site, TX—Complete the Environmental Impact Statement (EIS) to study proposed areas for training land acquisition by 2nd Quarter FY2012. 	On hold	Public scoping was completed 2nd Quarter FY11; publication of the Draft EIS was anticipated by 4th Quarter FY2012; however, completion of the EIS and training land acquisition have been put on hold (possibly indefinitely) due to funding constraints.
	<ul style="list-style-type: none"> Fort Benning, GA—Complete the Environmental Impact Statement (EIS) to study proposed areas for training land acquisition by 4th Quarter FY2011. 	On hold	Completion of the Final EIS and Record of Decision (ROD) continues to be delayed due to pending Army force structure decisions; a decision on land acquisition will not be made until Army force structure decisions are announced; USACE real estate planning studies completed 4th Quarter FY2011; USACE to complete title work and appraisals pending ROD to proceed.

Table 4-4: Range Space Actions and Milestones—Goal: Manage Increasing Military Demand for Range Space (Continued)

MARINE CORPS

ACTIONS	MILESTONES	STATUS	ADDITIONAL SERVICE COMMENT
Define future requirements for land ranges and other areas to support training, current and projected land shortfalls, and possible courses of action to mitigate shortfalls at range complex, regional and Service levels.	▶ Include range requirements analysis in regional RCMPs.	Ongoing	See Table 4-1 for schedule.
	▶ Facilitate enhanced cross-service utilization of range areas in Regional RCMPs.	Ongoing	
	▶ Initiate strategic-level assessment of range requirements and shortfalls re: training land and airspace (initiate FY2010).	Ongoing	Preliminary assessment prepared in FY2011; additional studies in furthering strategic assessment objectives are ongoing, including OSD-directed Pacific Training Analysis, and Marine Corps assessments of training land requirements in the Pacific region.
	▶ Continue range expansion planning for MCAGCC Twentynine Palms.	Ongoing	The EIS was approved with the signing of the Record of Decision in February 2013. With the finalization of the EIS, additional assessment by FAA of airspace alternatives is expected.
	▶ Continue range expansion planning for Townsend Bombing Range.	Ongoing	Draft EIS published for comment in July 2012 and the extended public comment period has now closed. Preparation of the Final EIS is ongoing.

NAVY

ACTIONS	MILESTONES	STATUS	ADDITIONAL SERVICE COMMENT
Define future requirements for land ranges and other areas to support training, current and projected land shortfalls, and possible courses of action to mitigate shortfalls at Navy range complexes.	▶ Continue update process for RCMPs to assess future requirements for Navy air, sea, and land ranges based on force structure change, and new weapon systems and missions; complete range requirements in Navy Service-level Planning, Programming, Budgeting, and Execution.	Ongoing	Review and rewrite of RCMPs is underway on a staggered basis. Validated shortfalls in range capabilities will be adjudicated during each POM development.
	▶ Employ annual PPBE requirements generation cycle to survey Pacific Fleet, United States Fleet Forces, and range managers to determine land and sea space needs and initiate action to meet requirements.	Ongoing	

AIR FORCE

ACTIONS	MILESTONES	STATUS	ADDITIONAL SERVICE COMMENT
Improve range space considerations on AF basing decision-making.	▶ Incorporate range space as a key and quantifiable factor in the AF corporate basing process.	Ongoing	Progress continuing into 2013.
Develop range configuration to support urban training.	▶ Completed Phases 1 (Mountainside Village) and 2 (Hillside Tunnels) of four-phase urban training complex plan.	Ongoing	Progress continuing into 2013.

Table 4-5: Energy Actions and Milestones—Goal: Address Impacts from New Energy Infrastructure and Renewable Energy Impacts

ARMY

ACTIONS	MILESTONES	STATUS	ADDITIONAL SERVICE COMMENT
Assess on-going Army energy security projects for impact on mission.	▶ Issue Army policy on review and coordination process for internal energy projects to ensure projects do not impact on the training/testing mission.	Complete	Continuing coordination with Army G-3/5/7 to minimize and mitigate impacts on the training/testing mission.
	▶ Identify central Army portal for all external energy projects having a potential training or environmental impact at Army installations.	Complete	Deputy Assistant Secretary of the Army for Energy and Sustainability is the central Army point of contact. Army G-3/5/7 provides training assessment for all projects. Coordination is ongoing.
	▶ Participate on the DoD Energy Subcommittee and assess strategic implications of infrastructure policy on Army training equities.	Ongoing	DoD Energy Siting Clearinghouse has been established; Army coordination is ongoing.

MARINE CORPS

ACTIONS	MILESTONES	STATUS	ADDITIONAL SERVICE COMMENT
Support Office of the Secretary of Defense (OSD)-directed energy infrastructure policy and assessments.	▶ Support OSD initiatives to assess supportability of renewable energy development projects in vicinity of military installation, per NDAA 2011.	Ongoing	
Implement Marine Corps Interim Policy on Conduct of Compatibility Assessments for Off-Installation Renewable Energy Projects.	<ul style="list-style-type: none"> ▶ Establish criteria for assessing potential impacts of renewable energy development on military training ranges and airspace. ▶ Fully support renewable energy development to the extent compatible with military training. ▶ Establish Renewable Energy Working Groups at MCI commands to monitor proposed energy infrastructure development in vicinity of Marine Corps installations and military training airspace. ▶ Execute formal outreach and engagement programs with all governmental, non-governmental, and private and commercial stakeholders of renewable energy programs relevant to Marine Corps activities. ▶ Implement formal renewable energy compatibility assessment program at installation, MCI, and Headquarters levels. 	Ongoing	
Implement the Marine Corps Expeditionary Energy Strategy (2011).	<ul style="list-style-type: none"> ▶ USMC Expeditionary Energy Office (E2O) (established 2009). ▶ Plan and execute strategy to substantially reduce energy footprint of operational forces (e.g., 50% reduction in fossil fuel use by operating forces by 2025). 	Ongoing	

Table 4-5: Energy Actions and Milestones—Goal: Address Impacts from New Energy Infrastructure and Renewable Energy Impacts (Continued)

Implement Marine Corps Installations Energy Conservation Strategy.	▶ Implement Marine Corps Installations Energy Conservation Strategy.	Ongoing	
	▶ Continuously respond to requests for analysis on potential impacts on range capabilities and range space from proposed energy infrastructure.	Ongoing	
	▶ Refine and expand Geographic Information System and Mission Compatibility Awareness Tool (MCAT) for use in impact assessments by the end of FY2013.	Updated	

NAVY

ACTIONS	MILESTONES	STATUS	ADDITIONAL SERVICE COMMENT
Coordinate and contribute to the ongoing OSD effort to ensure energy infrastructure proposals are accomplished at the appropriate level.	▶ Continuously respond to requests for analysis on potential impacts on range capabilities and range space from proposed energy infrastructure	Ongoing	
	▶ Refine and expand Geographic Information System and Mission Compatibility Awareness Tool (MCAT) for use in impact assessments by the end of FY2013.	Updated	
	▶ Continue to interact with Bureau of Ocean Energy Management state renewable energy task forces to support an iterative assessment of wind energy development proposals to minimize impacts to Navy/DoD readiness requirements in federal waters.	Ongoing	
	▶ Continue to support the DoD Siting Clearinghouse in assessing renewable energy development proposal impacts.	Ongoing	
	▶ Support and refine the internal Navy process enabling DoD efforts to gather and assess wind farm proposals through the Navy's Task Force on Compatibility and Readiness Sustainment.	Ongoing	

AIR FORCE

ACTIONS	MILESTONES	STATUS	ADDITIONAL SERVICE COMMENT
Engage renewable energy proponents in order to collaborate on site selections.	▶ Continue to coordinate with DOE and AWEA to share data from development screening tools.	Ongoing	Air Force coordinates through Siting Clearinghouse process.
Study potential impacts and mitigation techniques.	▶ Expand Radar Toolbox for prediction of impacts on ASR-11 radar from wind turbines.	Ongoing	Radar Toolbox predictive analysis module completed (2012). Validation underway in DoD/DOE Interagency Field Test and Evaluation. Potential development of false-track prediction model under investigation.
Create and field a DoD tracking and visualization tool for energy proposals.	▶ Develop Mission Compatibility Analysis Tool (MCAT).	Ongoing	Air Force began MCAT use for OEAAA and is coordinating with OSD for expanded use of MCAT for clearinghouse informal reviews.

Table 4-5: Energy Actions and Milestones—Goal: Address Impacts from New Energy Infrastructure and Renewable Energy Impacts (Continued)

Incorporate Energy Action into Air Force official guidance on encroachment.	▶ Develop Air Force Policy Directive that includes energy encroachment initiatives.	Complete	AFPD 90-20 Encroachment Management; published 2012.
	▶ Develop Air Force Instruction that includes energy encroachment initiatives.	Ongoing	AFI 90-2001 Encroachment Management in coordination, publication expected early 2013.
Prepare for increased renewable energy priority and development.	▶ Participate in White House Task Force on Wind Turbine Impacts on Radar.	Ongoing	
	▶ Engage U.S. Bureau of Land Management to improve siting process.	Ongoing	

Table 4-6: Climate Actions and Milestones—Goal: Anticipate Climate Change Impacts

ARMY

ACTIONS	MILESTONES	STATUS	ADDITIONAL SERVICE COMMENT
Assess Global Climate Change risks and vulnerabilities.	▶ Implement Global Climate Change planning and programming solutions that address the risks and commitments described in the 2010 DoD Quadrennial Defense Report.	Complete	In FY2012, the Army developed a framework for integrating climate change vulnerability assessments and adaptation planning into existing installation-level plans and planning processes. The framework will enable consistent installation-level assessment and planning, which will facilitate an Army-wide rollout.
	▶ Develop and validate a climate change vulnerability assessment and adaptation planning framework for installation assessments by 4th Quarter FY2012.	Partially Complete; Ongoing	The climate change vulnerability assessment and adaptation planning framework developed in FY2012 (described above) is being validated at two Army installations in FY2013. Development is complete; validation is anticipated to be complete by 4th Quarter FY2013.
	▶ Assess Global climate change risks and vulnerabilities.	Partially Complete; Ongoing	The Army conducted a high-level (Army-wide) climate change vulnerability assessment in FY2012, consistent with the CEQ's March 2011 climate change guidance. Upon validation of the framework described above, the installation-level climate change vulnerability assessments and adaptation/ mitigation measures will be executed by incorporation into the next scheduled (recurring) updates of installation-level plans.
	▶ Incorporate Global Climate Change adaptation measures in existing Army plans.	Updated; Ongoing	Recognizing that Army budgets are constrained, the Army's approach is to incorporate climate change considerations and adaptation measures into existing Army plans, rather than seeking additional funding streams as part of the POM process. These plans include Installation Strategic Plans, Real Property Master Plans, and Integrated Natural Resources Management Plans.
	▶ Track changes in range SRM and ITAM resulting from unexpected weather patterns.	New Milestone	

MARINE CORPS

ACTIONS	MILESTONES	STATUS	ADDITIONAL SERVICE COMMENT
Support OSD-directed climate change policy and assessments.	▶ Continue to respond to requests for data and analysis on potential impacts of range operations on climate change, and climate change impacts on range capabilities (as directed by OSD).	Ongoing	
	▶ Continue leadership role at Headquarters level in DoD Clean Air Act Services' Steering Committee, Subcommittee for Global Climate Change.	Ongoing	USMC representative is currently the Subcommittee chair.

NAVY

ACTIONS	MILESTONES	STATUS	ADDITIONAL SERVICE COMMENT
Support OSD-directed climate change policy and assessments.	▶ Implement DoD Quadrennial Defense Report Global Climate Change directives.	Ongoing	
	▶ Observe and assess climate change impacts and include in POM planning the specific applied climate change trends and vulnerabilities to range capabilities identified by DoD.	Ongoing	

Table 4-6: Climate Actions and Milestones—Goal: Anticipate Climate Change Impacts (*Continued*)

AIR FORCE

ACTIONS	MILESTONES	STATUS	ADDITIONAL SERVICE COMMENT
Assess Global Climate Change risks and vulnerabilities.	<ul style="list-style-type: none"> ▸ Assess climate change risks and vulnerabilities. 	Ongoing	

Table 4-7: Environmental Stewardship Actions and Milestones—Goal: Sustain Excellence in Environmental Stewardship

ARMY

ACTIONS	MILESTONES	STATUS	ADDITIONAL SERVICE COMMENT
<p>Execute the Army Range Assessment Program.</p>	<ul style="list-style-type: none"> Review and finalize all range assessment data from Phase I reports. 	Complete	
	<ul style="list-style-type: none"> Complete Phase II assessments, where required, by 4th Quarter FY2014. 	Updated; Ongoing	139 Phase II assessments are required based on completion of the Phase I assessments; 25 Phase II assessments are complete. All other Phase II assessments are ongoing or are under contract and expected to be complete by 4th Quarter FY2014.
<p>Execute environmental management and stewardship program to support sustainment of ranges and training lands.</p>	<ul style="list-style-type: none"> Finalize the Army Sustainability Campaign Plan. 	Complete	
	<ul style="list-style-type: none"> Start implementing tasks and objectives identified in the Army Sustainability Campaign Plan (ASCP) by 3rd Quarter FY2011. 	Complete	Implementation memorandum was signed 2nd Quarter of FY2011 and implementation is ongoing throughout the Army. The ASCP was developed to integrate sustainable practices/ approaches into Army plans, planning processes, and operations. In FY12 sustainability was successfully identified as a 'Foundation' principle in the overarching Army Campaign Plan (ACP) and on-going ASCP tasks were incorporated into the ACP's Campaign Objectives (e.g., energy and water efficiency and security). Other actions completed in FY12 included the issuance of updated Real Property Master Planning guidance that incorporates sustainable design and development principles; issuance of the Army's Energy and Sustainability Strategic Communications Plan; and creation of a 10-session sustainability course at the Army War College.
	<ul style="list-style-type: none"> Implement a process to integrate natural resource and conservation management plans into the Range Complex Master Plan (RCMP) template by 4th Quarter FY2011. 	Cancelled	It was determined that the procedural challenges and costs to implement these management plans into the RCMP out-weighed the benefits after further review and internal coordination.
<p>Review, update, and promulgate environmental management and stewardship policy and regulation to support sustainment of ranges and training lands.</p>	<ul style="list-style-type: none"> Review and update Army Regulation 200-1, Environmental Protection and Enhancement by 3rd Quarter FY2012. 	Updated; Delayed, Ongoing	Continuing to work with environmental stakeholders to resolve critical issues and move the publication process forward as directed by Army leadership; anticipate update being completed by 4th Quarter FY2013.
	<ul style="list-style-type: none"> Promulgate the compliance policy statement for the Army's Ecosystem Services by 4th Quarter FY2012. 	Updated; On Hold	Army policy for Ecosystem Services is continuing to be worked internally, pending issuance of OSD Ecosystem Services policy.
	<ul style="list-style-type: none"> Promulgate Army Native American Alaska Native Policy and implementing guidance by 4th Quarter FY2013. 	New	New action and milestone. Army Native American Alaska Native Policy Memorandum was signed 1st Quarter FY2012; policy and implementing guidance development is underway.

Table 4-7: Environmental Stewardship Actions and Milestones—Goal: Sustain Excellence in Environmental Stewardship (Continued)

MARINE CORPS

ACTIONS	MILESTONES	STATUS	ADDITIONAL SERVICE COMMENT
Maintain Service-wide environmental management and range sustainability programs in accordance with applicable laws and regulations.	▶ Engage in national regulatory and legislative processes on issues with that may potentially impact range sustainability or range readiness in coordination with the Office of the Secretary of Defense.	Ongoing	Community Plans and Liaison Office (CPLO) issue identification and engagement at headquarters level, in coordination with the Marine Corps Office of Legislative Affairs (OLA).
	▶ Continue to engage local, regional, and State regulatory agencies on issues that may affect range sustainability or range readiness.	Ongoing	Marine Corps continues to lead and participate in ongoing regional inter-agency coordination, in furtherance of the readiness and environmental stewardship objectives, including the WRP and SERPPAS initiatives.
	▶ Explore broader, landscape-level approaches and partnerships to meet regulatory and stewardship responsibilities for natural resources (e.g., wetland and Endangered Species banks) at the regional and national levels in coordination with the other branches of service, the Department of the Interior, U.S. Army Corps of Engineers and the Environmental Protection Agency.	Ongoing	Marine Corps actively participates in the Desert Renewable Energy Conservation Plan (DRECP). The DRECP is a landscape-level, multi-agency initiative to conserve and manage plant and wildlife communities in the desert regions of California while facilitating the timely permitting of compatible renewable energy projects. Actively pursuing market-based conservation initiatives.
	▶ Encourage non-governmental organizations and local communities to work on regional solutions for land use conflicts (e.g., Southeast Regional Partnership for Planning and Sustainability and Western Regional Partnership).	Ongoing	Ongoing leadership of and participation in WRP and SERPPAS. CPLO at each region and installation actively engages and coordinates with local communities for land use planning.

NAVY

ACTIONS	MILESTONES	STATUS	ADDITIONAL SERVICE COMMENT
Execute Service-wide environmental management and range sustainability programs as required by law/regulation.	▶ Evaluate the implementation and effectiveness of Integrated Natural Resources Management Plans at the end of each fiscal year.	Ongoing	
	▶ Continue NEPA, MMPA, and ESA compliance requirements for at-sea operational areas and range complexes.	Ongoing	

AIR FORCE

ACTIONS	MILESTONES	STATUS	ADDITIONAL SERVICE COMMENT
Continue environmental management and range sustainability programs.	▶ Maintain active participation in Range Sustainment Initiatives e.g., Southeast Partnership for Planning and Sustainability and Western Regional Partnership	Ongoing	

4.2 FUNDING

NDAA Section 366(a)(3)(C) requires DoD and the Military Services to report on funding requirements associated with implementing range sustainability initiatives. DoD has stated in previous submissions of this report that it faces several challenges in meeting this requirement. In an attempt to develop a common framework across the Military Services for consistently and accurately tracking and reporting range sustainability funding, a Sustainable Ranges Funding Subgroup was formed to examine funding strategies and categorizations used by the Military Services for their training range sustainability efforts. This Subgroup developed four main categories as a common starting point from which to report training range sustainability funding data. Descriptions and examples for these four funding categories are in Table 4-8 below.

These categories serve as a framework for OSD and the Military Services to track and report, range sustainability fiscal resources in the context of the SRR and should not be confused with appropriation categories. The ability to compare side-by-side the status of resources against the results of the range encroachment and capabilities assessments gives DoD increased capability to address progress on resolving range sustainability issues. Combined, this framework represents an important management tool that supports informed decisions about both the adequacy of existing resources and the need for additional investment of sustainability dollars. Future funding will necessarily be subject to change and is presented for planning purposes only. Military Service-wide range sustainability funding levels for FY2013 through FY2017 are provided in Table 4-9.

Table 4-8: DoD Sustainable Ranges Initiatives Funding Categories

FUNDING CATEGORY	DESCRIPTION	SPECIFIC EXAMPLES
Modernization & Investment	<ul style="list-style-type: none"> ▶ Research, development, acquisition, and capital investments in ranges and range infrastructure. It includes related items such as real property purchases, construction, and procurement of instrumentation, communication systems, and targets. 	<ul style="list-style-type: none"> ▶ Construction of new Multi-Purpose Training Ranges at Army installations ▶ Construction of Improvised Explosive Device (IED) Defeat Lanes ▶ Upgrades to Small Arms Ranges
Operations & Maintenance	<ul style="list-style-type: none"> ▶ Funds allocated for recurring activities associated with operating and managing a range and its associated infrastructure, including funds dedicated to range clearance, real property maintenance, and range sustainment plan development. 	<ul style="list-style-type: none"> ▶ Clearance of unexploded ordnance prior to range construction ▶ CivPay for Range Operators at Army installations
Environmental	<ul style="list-style-type: none"> ▶ Funds dedicated to environmental management of ranges, including range assessments, response actions, and natural and cultural resource management planning and implementation. 	<ul style="list-style-type: none"> ▶ Conservation funding for INRMPs and ICRMPs ▶ Environmental mitigation costs associated with range modernization and range construction ▶ Conducting Range Assessments
Encroachment	<ul style="list-style-type: none"> ▶ Funds dedicated to actions to optimize accessibility to ranges by minimizing restrictions that do or could limit ranges activities, including outreach and buffer projects. 	<ul style="list-style-type: none"> ▶ Administration and support of the Army Compatible Use Buffer (ACUB) program

Table 4-9: Service Training Range Sustainment Funding (\$M)

SERVICE*	FISCAL YEAR				
	FY2013	FY2014	FY2015	FY2016	FY2017
ARMY					
Modernization & Investment	\$247.0	\$113.9	\$197.8	\$200.3	\$49.3
Operation & Maintenance	355.3	361.1	361.2	363.2	366.1
Environmental	162.8	158.3	159.8	167.9	156.7
Encroachment	9.1	9.1	9.1	9.2	9.1
Army Total	\$774.2	\$642.4	\$727.9	\$740.6	\$581.2
MARINE CORPS					
Modernization & Investment	\$44.1	\$34.6	\$34.3	\$35.3	\$35.9
Operation & Maintenance	41.5	42.2	42.9	43.1	43.8
Environmental	12.0	6.3	6.4	6.2	6.9
Encroachment	3.0	3.0	3.0	3.0	3.0
Marine Corps Total	\$100.6	\$86.1	\$86.6	\$87.6	\$89.6
NAVY					
Modernization & Investment	\$76.0	\$86.0	\$80.0	\$78.0	\$80.0
Operation & Maintenance	\$176.3	\$176.5	\$181.3	\$184.4	\$187.6
Environmental	\$45.0	\$42.0	\$45.0	\$48.0	\$50.0
Encroachment	\$20.8	\$21.3	\$21.7	\$22.2	\$22.7
Navy Total	\$318.1	\$325.8	\$328.0	\$332.6	\$340.3
AIR FORCE					
Modernization & Investment	\$98.2	\$96.0	\$98.7	\$86.8	\$89.0
Operation & Maintenance	\$174.7	\$146.5	\$150.5	\$149.1	\$150.1
Environmental	\$27.7	\$26.1	\$25.6	\$26.2	\$26.6
Encroachment**	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
Air Force Total	\$300.6	\$268.6	\$274.8	\$262.1	\$265.7
OSD					
REPI Program	\$54.5	\$34.0	\$34.1	\$34.2	\$34.4
DOD					
DoD Total	\$1,548.0	\$1,356.9	\$1,451.4	\$1,457.1	\$1,311.2

* Range sustainability programs are fully represented in the Military Services' programming and budgeting processes. Program fluctuations generally reflect the best alignment of resources across competing Military Service priorities based on programming guidance and validated by the Service Chiefs and Department Secretaries.

** The Air Force tracks SRI-related funding through two channels (A3/5 and A4/7) and do not precisely sync with how the SRR defines the four categories. As a result, the Air Force is unable to report on Encroachment funds, as defined in the SRR.

In an attempt to increase accuracy of reporting, the Military Services were asked to report based on their FY2013 President’s Budget submissions. Starting with the 2010 SRR, REPI program funds, which are centrally managed by OSD, have been broken out separately from Military Service encroachment funding for more accurate reporting. REPI funds support buffer initiatives across the Military Services and are allocated by OSD to the Military Services based on a competitive selection process that considers an assessment of threats, needs, and military priorities. Any Military Service funds budgeted for buffer projects are captured in that Military Services’ encroachment lines.

Table 4-10 outlines the Military Service explanations for funding fluctuations over the reporting period of FY 2013 through FY 2017. Funding for range sustainability efforts are fully represented in the Military Services’ programming and budgeting processes. Program fluctuations often reflect the choices Military Service Chiefs and Department Secretaries make in accepting risk and balancing their total portfolios across competing priorities in an increasingly austere fiscal environment.

4.3 DEFENSE READINESS REPORTING SYSTEM-RANGE ASSESSMENT MODULE

The Defense Readiness Reporting System—Range Assessment Module (DRRS RAM) provides the means to manage and report on the readiness and capability of military ranges. The DRRS RAM is intended to better integrate range assessments and readiness issues. DoD actions related to development of the DRRS RAM are consistent with the Section 366(b) requirement to improve readiness reporting by reflecting the training and readiness impacts caused by constraints on the use of military lands, marine areas, and airspace. Phase III allowed DoD to establish the link between range assessments and installations and range complexes. DoD has fulfilled its requirement to facilitate the assessment of ranges and how encroachment affects training, ultimately leading to the readiness of units.

Table 4-10: Funding Fluctuation Explanation

MILITARY SERVICE	MODERNIZATION & INVESTMENT	OPERATIONS & MAINTENANCE	ENVIRONMENTAL	ENCROACHMENT
Army	<ul style="list-style-type: none"> ▶ The significant reduction in MILCON in FY2013–FY2017 was the result of a Secretary of Defense reduction of the force. 	<ul style="list-style-type: none"> ▶ Funding relatively stable. 	<ul style="list-style-type: none"> ▶ Mandated reductions in manpower accounted for the reduction of funding for environmental conservation. Range response actions have increased in FY2015–2018 due to the decision that Non-DOD Owned Non-operational Defense Sites are not eligible for the Defense Environmental Restoration Program, and must be funded with O&M. 	<ul style="list-style-type: none"> ▶ Funding is relatively stable.
Marine Corps	<ul style="list-style-type: none"> ▶ Fluctuations were driven by prioritization and acceptance of certain levels of risk among competing priorities within the overall Marine Corps portfolio. 	<ul style="list-style-type: none"> ▶ Funding relatively stable. 	<ul style="list-style-type: none"> ▶ Fluctuations were driven by prioritization and acceptance of certain levels of risk among competing priorities within the overall Marine Corps portfolio. 	<ul style="list-style-type: none"> ▶ Funding relatively stable.
Navy	<ul style="list-style-type: none"> ▶ Fluctuations were driven by changes from R&D phases (and budget accounts) to procurement phases (and budget accounts) and programmatic changes in quantity. 	<ul style="list-style-type: none"> ▶ Funding relatively stable. 	<ul style="list-style-type: none"> ▶ Funding relatively stable. 	<ul style="list-style-type: none"> ▶ Funding relatively stable.
Air Force	<ul style="list-style-type: none"> ▶ Fluctuations were based on equipment procurement. 	<ul style="list-style-type: none"> ▶ Decrease based on overall funding reductions. 	<ul style="list-style-type: none"> ▶ Funding relatively stable. 	<ul style="list-style-type: none"> ▶ Funding relatively stable and is an estimate; actual numbers reported via OSD.

4.4 RANGE VISIBILITY TOOL

In 2012, OSD initiated an effort to address the need for greater visibility of training resources across all Military Services at all levels due to increased competition for home station training resources. This increased competition is due to decreased deployments and budget constraints, both of which necessitate more efficient use of existing training capabilities. In April 2012, OSD funded the development of the Training Visibility Tool as an add-on query capability to the existing Range Facility Management Support System (RFMSS) database used by the Army and the Marine Corps to schedule ranges. The Navy uses RFMSS to schedule small arms ranges only. The RFMSS database, which is updated daily, was chosen for this add-on capability because it already contains information on ranges and their associated capability. The tool will allow users to enter an address, zip code, desired proximity, and/or the range capability into the system. It will then display a list of ranges within a specified area, their availability, a map and driving directions, and scheduling information. Future improvements include plans to provide a link to the Air Force range scheduling system to provide greater visibility across all the Military Services. The tool is expected to be available for use by the Military Services by March 2013.

4.5 READINESS AND ENVIRONMENTAL PROTECTION INITIATIVE

REPI supports DoD-compatible land use and conservation partnering initiatives and funds projects at ranges and installations across the country. It is a critical component of DoD's SRI to prevent or reduce encroachment by protecting installation capability, accessibility, and availability for training and testing.

Section 10 United States Code (U.S.C.) 2684a, authorized by Congress in 2002, allows the Military Services to enter into agreements with state and local governments and private conservation organizations under the REPI program. Such agreements allow partners to use DoD and other public and private sector funds to acquire real property (or real property interests such as conservation easements) from willing sellers to preserve critical buffers and habitat areas near installations and ranges where the military operates, tests, and trains to support the

broader objective of limiting incompatible development.

Continued REPI success will require thoughtful planning with operators and range managers at the installation level. In a climate of transformation and resetting, it is critical to ensure REPI planners understand the current and future operational mission footprint and are planning protection measures to ensure continued access to those capabilities. Regular communication and planning across directorates also helps REPI planners find areas for additional leveraging or benefits, to include:

- ▶ Land exchange authority
- ▶ Ecosystem services such as wetlands banking credits or species or habitat conservation credits
- ▶ Cultural resource mitigation
- ▶ Revenue generation or working lands protection
- ▶ Compatible renewable energy planning
- ▶ Landscape-level linkages/ regional partnerships

For example, in 2012, the U.S. Fish and Wildlife Service (USFWS) recognized the active benefits and protections provided by REPI-supported buffer lands at Joint Base Lewis-McChord and Marine Corps Base Camp (MCB) Pendleton. Many installations are working closely with the USFWS to supplement on-post conservation efforts already being accomplished through Integrated Natural Resources Management Plans (INRMPs) with off-post habitat conservation using REPI and new Sikes Act authority.

Recently, the USFWS found that listing the mardon skipper butterfly was not warranted, in part, citing the "high level of protection against further losses of habitat or populations" resulting from Joint Base Lewis-McChord's buffer program and the management and improvement of those protected buffer lands. At MCB Camp Pendleton, the USFWS decision to exempt the on-base Riverside fairy shrimp habitat from critical habitat designation noted, that in addition to the benefits to the species from the INRMP, buffer land acquisitions offer evidence of Camp Pendleton's commitment to benefiting the species.

These examples of the positive partnerships cultivated between DoD and USFWS show REPI

can be a tool for realizing quantifiable relief and contributing to biodiversity protection. REPI will continue to encourage innovation and best practices, and seek additional benefits. These activities serve as a way to accelerate the rate of species recovery, so that the greatest flexibility and capabilities can be maintained across DoD for current and future missions. Please refer to DoD's 2013 REPI Report to Congress (<http://www.repi.mil>) for additional information on REPI and DoD's efforts to reduce encroachment through use of the 10 U.S.C. § 2684a authority.

4.6 REGIONAL PARTNERSHIPS

DoD is a partner in two multi-state, multiagency regional partnerships in rapidly growing areas of the country with significant DoD land presence: the Southeast Regional Partnership for Planning and Sustainability (SERPPAS) and the Western Regional Partnership (WRP). DoD engages in these partnerships to help advance understanding of stakeholder missions. Increasing mutual understanding makes it easier for partners to expand and coordinate efforts and activities that sustain military readiness in the form of landscape-scale initiatives. By promoting cross-boundary collaboration on planning and land use issues, DoD's regional partnerships can protect military testing and training operations of a broader scale and scope.

Established in 2005, state environmental and natural resource officials from across North Carolina, South Carolina, Georgia, Alabama, Mississippi, and Florida partnered with DoD and other federal agencies to form SERPPAS. SERPPAS works to prevent encroachment around military lands, encourage compatible resource-use decisions, and improve coordination among regions, states, communities, and the Military Services. In 2012, for example, SERPPAS developed the *Comprehensive Strategy for Prescribed Fire to Restore Longleaf Pine in the Southeast United States: A Vision for 2025*. This Prescribed Fire Strategy provides a collaborative approach for achieving the goals of the Range-wide Conservation Plan for Longleaf Pine, a habitat critically linked to sustaining military training operations in the Southeast. The conservation plan calls for increasing Longleaf Pine acreage from 3.4 million to 8 million by 2025. The vision of the strategy is to have region-wide application of prescribed fire at the scale and frequency needed to establish the additional acres of longleaf pine on private lands by

the year 2025, while supporting continued longleaf conservation by public land managers.

Similarly, the WRP also continued to make great strides as an effective forum for DoD, other federal agencies, tribes, and state entities to work collaboratively on issues in the west. WRP recently developed a GIS web mapping application and several resource documents that help stakeholders identify common encroachment or land use issues within key focus areas. Stakeholders are now moving forward using these WRP tools and developing collaborative efforts to address identified issues. For example, stakeholders are using tools such as the mapping application's Land Use Planning Report Tool, the WRP Airspace Sustainability Overview document, and the WRP Energy Guide to develop broad-based regional planning initiatives in the Mojave Region and in the Southeastern Arizona/New Mexico Region. These efforts will help stakeholders make better informed decisions to benefit ecological and military values in addressing energy development and other infrastructure, threatened and endangered species management, and other encroachment concerns. WRP has also entered into GIS data working agreements with the state Department of Fish and Game to ensure that consistent, quality natural resource data is available in support of planning efforts.

4.7 OFFICE OF ECONOMIC ADJUSTMENT COMPATIBLE USE PROGRAM

The Office of Economic Adjustment's (OEA) Compatible Use Program is the only federal government program that provides direct assistance to communities to help them work with the military to prevent and mitigate encroachment. Technical and financial assistance is available for state and local governments through the Joint Land Use Study (JLUS) process to partner with the local military to plan and carry out strategies promoting compatible civilian use adjacent to installations, ranges, and military flight corridors. This program is further supported through Executive Order 12788, as amended, which provides direction for other federal agencies to assist state and local governments, through the Defense Economic Adjustment Program, to prevent civilian growth and development from impairing the military mission.

A JLUS is undertaken by state or local government to address local civilian and military activity that may adversely impact the military mission and local quality of life. The state or local government works with the military, federal, state, and local officials, residents, businesses, and landowners. A JLUS results in a strategic plan and specific implementation actions to ensure civilian growth and development are compatible with vital training, testing, and other military missions. Some examples of implementation actions include establishment of military overlay districts with specific land use and zoning requirements, unified development ordinances, amendments to capital improvement plans, transfer of development rights, building code sound attenuation measures, and local development review procedures to ensure input from the military. The JLUS process promotes and enhances civilian and military communication and collaboration, serves as a catalyst to sustain the military mission, and promotes public health, safety, quality of life, and economic viability of a region. More than 85 JLUS projects currently are underway across the country.

JLUS and REPI are complementary to one another. Military and stakeholder communities may identify an issue for which an REPI project may provide resolution through the JLUS process. The JLUS is a powerful tool for bringing communities and the military together to address compatible use issues, develop a set of compatibility guidelines, and identify specific implementation measures for both the community and military to ensure the long-term viability of the military mission.

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EMERGING SRI CHALLENGES

As DoD's SRI has continued to mature over the last 10 years, DoD and the Military Services have made significant progress in being able to identify and act upon the internal and external pressures that constrain the use of training resources. Ongoing challenges on the horizon include:

- ▶ Renewable energy
- ▶ Threatened and endangered species
- ▶ Demand for frequency spectrum
- ▶ Indirect impacts of increased home station training

To ensure the long-term sustainability of ranges in the future, DoD must continue to build upon the early successes of the SRI as well as seek and foster innovation in assessing and meeting evolving challenges in today's dynamic and global setting.

5.1 RENEWABLE ENERGY

Competition for landspace, airspace, and seaspace for siting of renewable energy infrastructure to meet national energy objectives is a growing concern in relation to DoD's capability and capacity to train and maintain readiness. As a result, DoD established a partnership with DOI through the ILUCC to enhance collaboration in support of national renewable energy goals on BLM lands. DoD has been working on developing a list of compatible renewable energy siting considerations by exchanging information with interested stakeholders to include NGOs, other government agencies, and the renewable energy industry. In addition, DoD and BLM have established a wind energy siting protocol for projects on BLM lands. This protocol helps protect military training equities. These considerations are intended to

ensure military training, testing, and operational interests are considered.

DoD also continues to work with BOEM and the coastal states through a collaborative task force process to ensure that renewable energy infrastructure siting on the Outer Continental Shelf is compatible with DoD's offshore activities. For example, DoD has worked in partnership with BOEM to assess over 2,000 lease blocks on the Atlantic Outer Continental Shelf and determined that three quarters of these can be developed for utility-scale offshore wind energy projects without adversely impacting the DoD mission. Additionally, DoD continues to seek proactive engagement with stakeholders to develop compatible siting solutions through the DoD Siting Clearinghouse. The purpose of the DoD Siting Clearinghouse is to facilitate the development of fully coordinated Department positions on the mission compatibility of proposed projects for energy developers, government agencies, and other concerned parties.

5.2 DEMAND FOR FREQUENCY SPECTRUM

The growing prevalence of wireless technology and its demand for additional frequency conflicts with the DoD's requirement to train for increasingly complex missions using higher performance, technologically advanced weapons. For example, the NTIA is working with the FCC to make available a total of 500 MHz of federal and nonfederal spectrum over the next 10 years, suitable for both mobile and fixed wireless broadband use. DoD is investigating means to cohabitate with commercial wireless users and develop methods to access spectrum that are more spectrally efficient, flexible, and adaptable. In addition to these improvements, DoD will continue to work closely with spectrum regulators,

nationally and internationally, to ensure these improvements are authorized for use.

DoD will be required to more efficiently use the shrinking spectrum allocated to it through technological innovation and improved scheduling. Training range encroachment and frequency spectrum issues continue to be challenges affecting the training mission. Increasing risk and cost associated with these issues must be continuously managed in order to ensure accomplishment training objectives by the user community. DoD's efforts to include additional participants such as Command and Control, Intelligence, Surveillance, and Reconnaissance platforms and warships in live instrumented training (enabling the training of entire command, control, and execution action chains) may likewise be threatened.

The warfighters' ability to train in a live environment against new emerging threat weapons systems, while utilizing synthetic means, is invaluable. For instance, the ability to simulate U.S. sensors as they would be affected in combat is vital to warfighters' preparation for a hostile environment. The loss of spectrum could result in the inability to "train like we operate" and the inability to replicate operational utility of radio frequency sensors of U.S. systems in the safety of realistic training environments. DoD will continue to evaluate and mitigate frequency challenges to slow any loss of training and pre-deployment capability.

5.3 THREATENED AND ENDANGERED SPECIES

Endangered species management issues remain a significant challenge to DoD. Urbanization and sprawl surrounding installations continue to restrict the available habitat for many species. As a result, much of the remaining habitat for a number of listed and at-risk species exists on military installations. The USFWS is required to rule on 251 candidate species for potential listing on the Federal Lists of Endangered and Threatened Wildlife and Plants by 2017. OSD has identified that 110 of these candidate species would have a potential impact on training, if listed. Eight of the 110 species—including the Greater Sage Grouse, the Red Knot shorebird, and Taylor's Checkerspot butterfly—could have a significant impact on training.

Constraints placed on training due to regulatory requirements for managing at-risk, threatened,

or endangered species or associated habitat are of particular concern to OSD. DoD is working to identify and address the critical issues related to threatened and endangered species and species at-risk that affect military training today and possibly in the future (through climate change and species adaptation). Beyond identifying issues, DoD is committed to collaboratively developing solutions that OSD may be able to implement through policy, discussions with Congress, partnerships with NGOs, and partnerships with other federal agencies that may not already be in place.

5.4 INDIRECT IMPACTS OF INCREASED HOME STATION TRAINING

As U.S. Forces drawdown from Afghanistan and home station training increases, the competition for ranges, airspace, and maneuver training land is expected to increase. This competition within the live training domain will be exacerbated by existing shortfalls and growing encroachment challenges. The increased levels of training at home station will also result in more noise from weapon systems, aircraft, and tactical vehicles at levels not experienced by local communities over the last 10 years due to high deployment rates. DoD will continue to address these challenges in a comprehensive manner through policy, programs, and proactive partnering at the federal, state, and local level.

5.5 DOD'S LONG-TERM SRI OUTLOOK

Effective training is the cornerstone for success in carrying out DoD's missions. Ensuring effective training will continue to challenge the Department through this period of constrained budgets; rapidly evolving military capabilities; competition for the land, sea, air, and frequency spectrum that training requires; and evolving threats. DoD ranges must provide the capacity and capabilities needed for effective training. Ranges give our nation's military personnel the ability to train as they will operate which maximizes the probability of mission success and reduces the risk of casualties. Through the SRI and related efforts, DoD is working to sustain the capability to train on its ranges.

APPENDIX

A

RANGE INVENTORY SUMMARY

The requirement for DoD and the Military Services to develop and maintain an inventory of operational ranges is specifically detailed in NDAA Section 366(c). DoD maintains an inventory of its ranges, range complexes, military training routes, and special use areas and has reported this inventory annually in previous SRRs. For this year's SRR, DoD is providing Congress with only that inventory information that has changed from the 2012 SRR. The Army and Air Force are the only Military Services with changes to their inventory, and these are due primarily to their

implementation of new systems to capture and track inventory data.

For the Army, several updates and corrections were made in FY2013 to improve the overall accuracy of the information reported. The FY2013 Army Range Inventory provided here should be considered the new baseline to refer to going forward and is presented in Table A-1.

Table A-1: Army Training and Testing Range Complex Inventory

RANGE COMPLEX	UNITED STATES (US) OR OVERSEAS (OS)	STATE OR COUNTRY	COMMAND/ COMPONENT	LAND AREA FOR RANGES (ACRES)	SPECIAL USE AIRSPACE (SQ NM)	SEA SURFACE AREA (SQ NM)	UNDERWATER TRACKING AREA (SQ NM)	RANGE TYPE											
								AIR-TO-AIR OR AIR-TO-SURFACE	AIR-TO-GROUND	LAND MANEUVER	LAND IMPACT AREA	LAND FIRING RANGE	C2W/EW	OCEAN OPERATING AREA	MOUT	UNDERWATER TRACKING RANGE	AMPHIBIOUS AREA	OTHER	
89TH RSC Mead WET Site	US	NE	USARC	956	0	0	0	N	N	Y	N	N	N	N	N	N	N	N	N
89TH RSC Sunflower WET Site	US	KS	USARC	69	0	0	0	N	N	Y	N	N	N	N	N	N	N	N	N
Aahoaka LTA	US	HI	ARNG	3,126	0	0	0	N	N	Y	N	N	N	N	N	N	N	N	N
Aberdeen Proving Ground	US	MD	AMC	64,250	133	0	0	N	N	Y	N	Y	N	N	N	N	N	N	Y
Albuquerque LTA	US	NM	USARC	7	0	0	0	N	N	Y	N	N	N	N	N	N	N	N	N
American Samoa LTA	US	AS	USARC	79	0	0	0	N	N	Y	N	N	N	N	N	N	N	N	N

Table A-1: Army Training and Testing Range Complex Inventory (Continued)

RANGE COMPLEX	UNITED STATES (US) OR OVERSEAS (OS)	STATE OR COUNTRY	COMMAND/ COMPONENT	LAND AREA FOR RANGES (ACRES)	SPECIAL USE AIRSPACE (SQ NM)	SEA SURFACE AREA (SQ NM)	UNDERWATER TRACKING AREA (SQ NM)	RANGE TYPE											
								AIR-TO-AIR OR AIR-TO-SURFACE	AIR-TO-GROUND	LAND MANEUVER	LAND IMPACT AREA	LAND FIRING RANGE	C2W/EW	OCEAN OPERATING AREA	MOUT	UNDERWATER TRACKING RANGE	AMPHIBIOUS AREA	OTHER	
Ananohola LTA	US	HI	ARNG	3,312	0	0	0	N	N	Y	N	N	N	N	N	N	N	N	N
Anniston Army Depot	US	AL	AMC	88	0	0	0	N	N	N	N	Y	N	N	N	N	N	N	Y
Ansbach LTA	OS	Germany	USAREUR	899	0	0	0	N	N	Y	N	Y	N	N	N	N	N	N	Y
Appendorf LTA	OS	Germany	USAREUR	223	0	0	0	N	N	Y	N	N	N	N	N	N	N	N	N
Arden Hills Army Training Site	US	MN	ARNG	1,796	0	0	0	N	N	Y	N	N	N	N	N	N	N	N	Y
Area I (North)	OS	Korea	EUSA	7,419	0	0	0	N	N	Y	Y	Y	N	N	Y	N	N	N	Y
Area II (Northwest)	OS	Korea	EUSA	94	0	0	0	N	N	N	N	Y	N	N	N	N	N	N	Y
Area III (Central)	OS	Korea	EUSA	50	0	0	0	N	N	N	N	Y	N	N	N	N	N	N	Y
Area IV (South)	OS	Korea	EUSA	24	0	0	0	N	N	Y	Y	Y	N	N	N	N	N	N	Y
Area Ockstadt	OS	Germany	USAREUR	192	0	0	0	N	N	Y	N	N	N	N	N	N	N	N	N
Artemus LTA	US	KY	ARNG	523	0	0	0	N	N	Y	N	N	N	N	N	N	N	N	N
Aschaffenburg LTA	OS	Germany	USAREUR	1,337	0	0	0	N	N	Y	N	Y	N	N	N	N	N	N	Y
Auburn	US	ME	ARNG	203	0	0	0	N	N	Y	N	Y	N	N	N	N	N	N	Y
Austin Training Property	US	NE, SD	ARNG	409	0	0	0	N	N	N	N	N	N	N	N	N	N	N	Y
AVN Training Area (Weyerhaeuser)	US	WA	USARC	20,443	0	0	0	N	N	N	N	N	N	N	N	N	N	N	Y
Babenhhausen LTA	OS	Germany	USAREUR	190	0	0	0	N	N	Y	N	N	N	N	N	N	N	N	N
Bamberg Army Airfield	OS	Germany	USAREUR	11	0	0	0	N	N	N	N	N	N	N	N	N	N	N	Y
Bamberg TA G	OS	Germany	USAREUR	2,099	0	0	0	N	N	N	N	Y	N	N	N	N	N	N	N
Bangor Training Center	US	ME	ARNG	189	0	0	0	N	N	Y	N	Y	N	N	N	N	N	N	Y
Barada LTA	US	NE	ARNG	85	0	0	0	N	N	Y	N	N	N	N	N	N	N	N	N
Barker Dam LTA	US	TX	USARC	1,636	0	0	0	N	N	N	N	N	N	N	N	N	N	N	Y
Barker Dam Training Site	US	TX	ARNG	572	0	0	0	N	N	Y	N	N	N	N	N	N	N	N	Y
Baumholder	OS	Germany	USAREUR	1,255	0	0	0	N	N	Y	Y	Y	N	N	Y	N	N	N	Y

Table A-1: Army Training and Testing Range Complex Inventory (Continued)

RANGE COMPLEX	UNITED STATES (US) OR OVERSEAS (OS)	STATE OR COUNTRY	COMMAND/ COMPONENT	LAND AREA FOR RANGES (ACRES)	SPECIAL USE AIRSPACE (SQ NM)	SEA SURFACE AREA (SQ NM)	UNDERWATER TRACKING AREA (SQ NM)	RANGE TYPE											
								AIR-TO-AIR OR AIR-TO-SURFACE	AIR-TO-GROUND	LAND MANEUVER	LAND IMPACT AREA	LAND FIRING RANGE	C2W/EW	OCEAN OPERATING AREA	MOUT	UNDERWATER TRACKING RANGE	AMPHIBIOUS AREA	OTHER	
Beaver Training Area	US	UT	ARNG	657	0	0	0	N	N	Y	N	N	N	N	N	N	N	N	N
Beckley City Police Range	US	WV	ARNG	2	0	0	0	N	N	N	N	Y	N	N	N	N	N	N	N
Beech Fork State Park	US	WV	ARNG	12,783	0	0	0	N	N	Y	N	N	N	N	N	N	N	N	N
Belton LTA	US	MO	USARC	461	0	0	0	N	N	Y	N	N	N	N	N	N	N	N	N
Benelux TSC	OS	Belgium	USAREUR	60	0	0	0	N	N	Y	N	N	N	N	N	N	N	N	N
BG Thomas Baker Training Site	US	MD	ARNG	871	0	0	0	N	N	Y	N	N	N	N	N	N	N	N	N
Biak Training Center	US	OR	ARNG	28,599	0	0	0	N	N	Y	N	Y	N	N	N	N	N	N	Y
Bidwell Hill	US	CO	ARNG	40	0	0	0	N	N	N	N	N	N	N	N	N	N	N	Y
Black Mountain	US	NM	ARNG	2,114	0	0	0	N	N	Y	N	Y	N	N	N	N	N	N	N
Black Rapids Training Site	US	AK	USARPAC	4,213	0	0	0	N	N	Y	N	N	N	N	N	N	N	N	N
Blanding Armory	US	UT	ARNG	28	0	0	0	N	N	Y	N	N	N	N	N	N	N	N	N
Blossom Point Research Facility	US	MD	AMC	1,643	0	0	0	N	N	Y	N	Y	N	N	N	N	N	N	Y
Blue Grass Army Depot	US	KY	AMC	175	0	0	0	N	N	Y	N	Y	N	N	N	N	N	N	Y
Boeblingen	OS	Germany	USAREUR	1,416	0	0	0	N	N	Y	N	Y	N	N	Y	N	N	N	Y
Bog Brook/ Riley Deepwoods Training Site	US	ME	ARNG	802	0	0	0	N	N	Y	N	Y	N	N	Y	N	N	N	Y
Bolivar LTA	US	TN	ARNG	170	0	0	0	N	N	Y	N	N	N	N	N	N	N	N	N
Book Cliffs Rifle Range	US	CO	ARNG	345	0	0	0	N	N	N	N	Y	N	N	N	N	N	N	N
Box Butte Reservoir LTA	US	NE	ARNG	13	0	0	0	N	N	N	N	N	N	N	N	N	N	N	Y
Breitenwald	OS	Germany	USAREUR	193	0	0	0	N	N	Y	N	Y	N	N	N	N	N	N	Y
Brettons Wood Biathlon Range	US	NH	ARNG	1	0	0	0	N	N	N	N	Y	N	N	N	N	N	N	N

Table A-1: Army Training and Testing Range Complex Inventory (Continued)

RANGE COMPLEX	UNITED STATES (US) OR OVERSEAS (OS)	STATE OR COUNTRY	COMMAND/ COMPONENT	LAND AREA FOR RANGES (ACRES)	SPECIAL USE AIRSPACE (SQ NM)	SEA SURFACE AREA (SQ NM)	UNDERWATER TRACKING AREA (SQ NM)	RANGE TYPE											
								AIR-TO-AIR OR AIR-TO-SURFACE	AIR-TO-GROUND	LAND MANEUVER	LAND IMPACT AREA	LAND FIRING RANGE	C2W/IEW	OCEAN OPERATING AREA	MOUT	UNDERWATER TRACKING RANGE	AMPHIBIOUS AREA	OTHER	
Buckeye Training Site	US	AZ	ARNG	1,481	0	0	0	N	N	Y	N	N	N	N	N	N	N	N	N
Buckley ANG Base, CO	US	CO	ARNG	10	0	0	0	N	N	N	N	N	N	N	N	N	N	N	Y
Buckman	US	FL	ARNG	68	0	0	0	N	N	N	N	N	N	N	N	N	N	N	Y
Bucksnot Gun Club	US	MO	ARNG	10	0	0	0	N	N	N	N	Y	N	N	N	N	N	N	N
Bug LTA	OS	Germany	USAREUR	111	0	0	0	N	N	Y	N	N	N	N	N	N	N	N	N
Buhl Training Site	US	ID	ARNG	162	0	0	0	N	N	Y	N	Y	N	N	N	N	N	N	N
Bullseye 02	OS	Korea	EUSA	1,395	0	0	0	N	N	Y	N	N	N	N	N	N	N	N	N
Bullville Usarc	US	NY	USARC	154	0	0	0	N	N	N	N	N	N	N	N	N	N	N	Y
Burgebrach LTA	OS	Germany	USAREUR	249	0	0	0	N	N	Y	N	N	N	N	N	N	N	N	N
Camel Tracks Training Site	US	NM	ARNG	8,348	0	0	0	N	N	Y	N	N	N	N	N	N	N	N	N
Cameron Pass	US	CO	ARNG	45,193	0	0	0	N	N	Y	N	N	N	N	N	N	N	N	N
Camp Adair	US	OR	ARNG	523	0	0	0	N	N	Y	N	Y	N	N	N	N	N	N	Y
Camp Ashland	US	NE	ARNG	1,044	0	0	0	N	N	Y	N	Y	N	N	N	N	N	N	Y
Camp Atterbury	US	IN	ARNG	32,815	0	0	0	N	N	Y	Y	Y	N	N	N	N	N	N	Y
Camp Barkeley	US	TX	ARNG	980	0	0	0	N	N	Y	N	N	N	N	N	N	N	N	N
Camp Beauregard	US	LA	ARNG	12,573	0	0	0	N	N	Y	Y	Y	N	N	N	N	N	N	Y
Camp Blanding	US	FL	ARNG	73,497	0	0	0	N	N	Y	Y	Y	N	N	Y	N	N	N	Y
Camp Bowie	US	TX	ARNG	8,932	0	0	0	N	N	Y	N	Y	N	N	N	N	N	N	Y
Camp Butner	US	NC	ARNG	4,597	0	0	0	N	N	Y	Y	Y	N	N	N	N	N	N	Y
Camp Clark	US	MO	ARNG	1,058	0	0	0	N	N	Y	Y	Y	N	N	N	N	N	N	Y
Camp Crowder	US	MO	ARNG	4,130	0	0	0	N	N	Y	N	Y	N	N	N	N	N	N	Y
Camp Curtis Guild	US	MA	ARNG	623	0	0	0	N	N	Y	N	Y	N	N	N	N	N	N	Y
Camp Darby	OS	Italy	USAREUR	135	0	0	0	N	N	N	N	N	N	N	N	N	N	N	Y
Camp Davis	US	ND	ARNG	82	0	0	0	N	N	Y	N	Y	N	N	N	N	N	N	Y
Camp Dawson	US	WV	ARNG	10,036	0	0	0	N	N	Y	Y	Y	N	N	Y	N	N	N	Y
Camp Edwards	US	MA	ARNG	13,619	13	0	0	N	N	Y	Y	Y	N	N	N	N	N	N	Y

Table A-1: Army Training and Testing Range Complex Inventory (Continued)

RANGE COMPLEX	UNITED STATES (US) OR OVERSEAS (OS)	STATE OR COUNTRY	COMMAND/ COMPONENT	LAND AREA FOR RANGES (ACRES)	SPECIAL USE AIRSPACE (SQ NM)	SEA SURFACE AREA (SQ NM)	UNDERWATER TRACKING AREA (SQ NM)	RANGE TYPE											
								AIR-TO-AIR OR AIR-TO-SURFACE	AIR-TO-GROUND	LAND MANEUVER	LAND IMPACT AREA	LAND FIRING RANGE	C2W/EW	OCEAN OPERATING AREA	MOUT	UNDERWATER TRACKING RANGE	AMPHIBIOUS AREA	OTHER	
Camp Fogarty Training Site	US	RI	ARNG	17,755	0	0	0	N	N	Y	Y	Y	N	N	N	N	N	N	Y
Camp Fowler	US	IN	ARNG	98	0	0	0	N	N	Y	N	N	N	N	N	N	N	N	N
Camp Fretterd	US	MD	ARNG	424	0	0	0	N	N	Y	N	N	N	N	N	N	N	N	Y
Camp Grafton	US	ND	TRADOC	11,594	0	0	0	N	N	Y	N	Y	N	N	N	N	N	N	Y
Camp Grayling	US	MI	ARNG	152,617	8,680	0	0	N	N	Y	Y	Y	N	N	N	N	N	N	Y
Camp Greaves	OS	Korea	EUSA	0	0	0	0	N	N	N	N	Y	N	N	N	N	N	N	N
Camp Gruber	US	OK	ARNG	47,166	0	0	0	N	N	Y	N	Y	N	N	Y	N	Y	Y	Y
Camp Guernsey	US	WY	ARNG	78,913	46	0	0	N	N	Y	Y	Y	N	N	Y	N	N	Y	Y
Camp Hale	US	CO	ARNG	21,389	0	0	0	N	N	Y	N	N	N	N	N	N	N	N	N
Camp Hartell	US	CT	ARNG	31	0	0	0	N	N	Y	N	Y	N	N	N	N	N	N	Y
Camp Howze	OS	Korea	EUSA	0	0	0	0	N	N	N	N	Y	N	N	N	N	N	N	N
Camp Humphreys	OS	Korea	EUSA	1	0	0	0	N	N	N	N	Y	N	N	N	N	N	N	N
Camp Johnson	US	VT	ARNG	591	0	0	0	N	N	Y	N	Y	N	N	N	N	N	N	Y
Camp Keyes TS	US	ME	ARNG	1	0	0	0	N	N	N	N	N	N	N	N	N	N	N	Y
Camp Luna	US	NM	ARNG	133	0	0	0	N	N	Y	N	N	N	N	N	N	N	N	N
Camp Mabry	US	TX	ARNG	178	0	0	0	N	N	Y	N	N	N	N	N	N	N	N	N
Camp Mackall	US	NC	FORSCOM	60,165	0	0	0	N	N	Y	N	N	N	N	N	N	N	N	Y
Camp Maxey	US	TX	ARNG	6,546	0	0	0	N	N	Y	Y	Y	N	N	N	N	N	N	Y
Camp McCain	US	MS	ARNG	12,418	0	0	0	N	N	Y	Y	Y	N	N	N	N	N	N	Y
Camp Merrill	US	GA	TRADOC	340,358	0	0	0	N	N	Y	N	Y	N	N	N	N	N	N	N
Camp Minden	US	LA	ARNG	14,762	0	0	0	N	N	Y	N	Y	N	N	N	N	N	N	N
Camp Murray	US	WA	ARNG	113	0	0	0	N	N	N	N	N	N	N	N	N	N	N	Y
Camp Navajo	US	AZ	ARNG	27,891	0	0	0	N	N	Y	Y	Y	N	N	N	N	N	N	Y
Camp Perry	US	OH	ARNG	7,115	0	0	0	N	N	Y	Y	Y	N	N	N	N	N	N	Y
Camp Rilea	US	OR	ARNG	4,212	0	0	0	N	N	Y	Y	Y	N	Y	N	N	Y	Y	Y
Camp Ripley	US	MN	ARNG	50,828	0	0	0	N	N	Y	Y	Y	N	N	Y	N	N	N	Y
Camp Roberts	US	CA	ARNG	40,981	64	0	0	N	N	Y	Y	Y	N	N	N	N	N	N	Y
Camp Robinson	US	AR	ARNG	30,820	0	0	0	N	N	Y	Y	Y	N	N	Y	N	N	Y	Y
Camp Rowland	US	CT	ARNG	38	0	0	0	N	N	N	N	N	N	N	N	N	N	N	Y
Camp San Luis Obispo	US	CA	ARNG	5,032	0	0	0	N	N	Y	Y	Y	N	N	N	N	N	N	Y
Camp Santiago	US	PR	ARNG	12,346	0	0	0	N	N	Y	Y	Y	N	N	Y	N	N	N	Y

Table A-1: Army Training and Testing Range Complex Inventory (Continued)

RANGE COMPLEX	UNITED STATES (US) OR OVERSEAS (OS)	STATE OR COUNTRY	COMMAND/ COMPONENT	LAND AREA FOR RANGES (ACRES)	SPECIAL USE AIRSPACE (SQ NM)	SEA SURFACE AREA (SQ NM)	UNDERWATER TRACKING AREA (SQ NM)	RANGE TYPE											
								AIR-TO-AIR OR AIR-TO-SURFACE	AIR-TO-GROUND	LAND MANEUVER	LAND IMPACT AREA	LAND FIRING RANGE	C2W/EW	OCEAN OPERATING AREA	MOUT	UNDERWATER TRACKING RANGE	AMPHIBIOUS AREA	OTHER	
Camp Seven Mile	US	WA	ARNG	340	0	0	0	N	N	Y	N	N	N	N	N	N	N	N	N
Camp Shelby	US	MS	ARNG	133,147	0	0	0	N	N	Y	Y	Y	N	N	N	N	N	N	Y
Camp Sherman	US	NC	ARNG	430	0	0	0	N	N	Y	Y	Y	N	N	N	N	N	N	N
Camp Smith	US	NY	ARNG	1,492	0	0	0	N	N	Y	Y	Y	N	N	N	N	N	N	Y
Camp Stanley Storage Activity	US	TX	AMC	82	0	0	0	N	N	N	N	Y	N	N	N	N	N	N	N
Camp Swift	US	TX	ARNG	11,716	0	0	0	N	N	Y	N	Y	N	N	N	N	N	N	Y
Camp Varnum	US	RI	ARNG	18	0	0	0	N	N	Y	N	N	N	N	N	N	N	N	Y
Camp Villere	US	LA	ARNG	1,483	0	0	0	N	N	Y	N	Y	N	N	N	N	N	N	Y
Camp Williams	US	UT	ARNG	23,364	0	0	0	N	N	Y	Y	Y	N	N	Y	N	N	N	Y
Camp Wismer	US	WS	ARNG	3,311	0	0	0	N	N	Y	N	Y	N	N	N	N	N	N	Y
Camp Withycombe	US	OR	ARNG	165	0	0	0	N	N	Y	N	N	N	N	N	N	N	N	Y
Campo Pond TA	OS	Germany	USAREUR	366	0	0	0	N	N	Y	N	Y	N	N	N	N	N	N	Y
Cao Malnisio	OS	Italy	USAREUR	4,098	0	0	0	N	N	Y	Y	Y	N	N	N	N	N	N	Y
Casa Grande Training Site	US	AZ	ARNG	797	0	0	0	N	N	Y	N	N	N	N	N	N	N	N	N
Casper Armory	US	WY	ARNG	27	0	0	0	N	N	Y	N	Y	N	N	N	N	N	N	N
Caswell Training Site	US	ME	ARNG	1,065	0	0	0	N	N	Y	Y	Y	N	N	N	N	N	N	N
Catoosa Volunteer Training Site	US	TN	ARNG	1,508	0	0	0	N	N	Y	Y	Y	N	N	N	N	N	N	Y
Cellina-Meduna	OS	Italy	USAREUR	11,558	0	0	0	N	N	Y	N	Y	N	N	N	N	N	N	Y
Chatfield Reservoir	US	CO	ARNG	2,271	0	0	0	N	N	N	N	N	N	N	N	N	N	N	Y
Clarks Hill TS	US	SC	ARNG	891	0	0	0	N	N	Y	N	N	N	N	N	N	N	N	N
Clinton Training Site	US	PA	USARC	154	0	0	0	N	N	Y	N	Y	N	N	N	N	N	N	Y
Colorado Springs Training Site	US	CO	ARNG	309	1	0	0	N	N	N	N	Y	N	N	N	N	N	N	Y
Conn Barracks	OS	Germany	USAREUR	4	0	0	0	N	N	N	N	Y	N	N	N	N	N	N	Y

Table A-1: Army Training and Testing Range Complex Inventory (Continued)

RANGE COMPLEX	UNITED STATES (US) OR OVERSEAS (OS)	STATE OR COUNTRY	COMMAND/ COMPONENT	LAND AREA FOR RANGES (ACRES)	SPECIAL USE AIRSPACE (SQ NM)	SEA SURFACE AREA (SQ NM)	UNDERWATER TRACKING AREA (SQ NM)	RANGE TYPE											
								AIR-TO-AIR OR AIR-TO-SURFACE	AIR-TO-GROUND	LAND MANEUVER	LAND IMPACT AREA	LAND FIRING RANGE	C2/W/EW	OCEAN OPERATING AREA	MOUT	UNDERWATER TRACKING RANGE	AMPHIBIOUS AREA	OTHER	
Cornhusker AAP	US	NE	USACE	6	0	0	0	N	N	N	N	Y	N	N	N	N	N	N	N
Cpt. Euripides Rubio Jr. Center	US	PR	USARC	51	0	0	0	N	N	N	N	N	N	N	N	N	N	N	Y
De Bremond Training Center	US	NM	ARNG	1,343	0	0	0	N	N	Y	N	Y	N	N	N	N	N	N	N
Defense Distribution Depot Susquehanna	US	PA	AMC	0	0	0	0	N	N	N	N	Y	N	N	N	N	N	N	Y
Deseret Chemical Depot	US	UT	AMC	549	0	0	0	N	N	N	N	Y	N	N	N	N	N	N	Y
Dillingham MIL RES	US	HI	USARPAC	449	0	0	0	N	N	Y	N	N	N	N	N	N	N	N	Y
Dona Ana Range Camp	US	NM	ARNG	64	0	0	0	N	N	Y	N	N	N	N	N	N	N	N	N
Douglas Training Site	US	AZ	ARNG	987	0	0	0	N	N	Y	N	N	N	N	N	N	N	N	N
Duffield Industrial Park	US	VA	ARNG	74	0	0	0	N	N	N	N	N	N	N	N	N	N	N	Y
Dugway Proving Ground	US	UT	ATEC	763,093	0	0	0	N	N	Y	Y	Y	N	N	N	N	N	N	Y
DZ Babich	US	MD	ARNG	113	0	0	0	N	N	N	N	N	N	N	N	N	N	N	Y
DZ Beech Hill	US	WV	ARNG	189	0	0	0	N	N	N	N	N	N	N	N	N	N	N	Y
Eagle Mountain Lake Training Site	US	TX	ARNG	1,246	0	0	0	N	N	Y	N	N	N	N	N	N	N	N	N
East Haven Rifle Range	US	CT	ARNG	113	0	0	0	N	N	Y	Y	N	N	N	N	N	N	N	Y
East Stroudsburg Armory	US	PA	ARNG	19	0	0	0	N	N	Y	N	N	N	N	N	N	N	N	N
Eastern Kentucky Gun Club	US	KY	ARNG	13	0	0	0	N	N	Y	N	Y	N	N	N	N	N	N	N
Ederle	OS	Italy	USAREUR	11	0	0	0	N	N	Y	N	Y	N	N	N	N	N	N	Y
Edgemoade TS Mtn Home	US	ID	ARNG	123	0	0	0	N	N	Y	N	N	N	N	N	N	N	N	N

Table A-1: Army Training and Testing Range Complex Inventory (Continued)

RANGE COMPLEX	UNITED STATES (US) OR OVERSEAS (OS)	STATE OR COUNTRY	COMMAND/ COMPONENT	LAND AREA FOR RANGES (ACRES)	SPECIAL USE AIRSPACE (SQ NM)	SEA SURFACE AREA (SQ NM)	UNDERWATER TRACKING AREA (SQ NM)	RANGE TYPE											
								AIR-TO-AIR OR AIR-TO-SURFACE	AIR-TO-GROUND	LAND MANEUVER	LAND IMPACT AREA	LAND FIRING RANGE	C2W/EW	OCEAN OPERATING AREA	MOUT	UNDERWATER TRACKING RANGE	AMPHIBIOUS AREA	OTHER	
Eglin AFB (ALARNG)	US	FL	ARNG	33,207	0	0	0	N	N	Y	N	Y	N	N	N	N	N	N	N
Eklutna Glacier TS	US	AK	USARPAC	33	0	0	0	N	N	Y	N	N	N	N	N	N	N	N	N
Ernie Pyle Usarc/Amsa #12 (G)	US	NY	USARC	2	0	0	0	N	N	N	N	N	N	N	N	N	N	N	Y
Ethan Allen Firing Range	US	VT	ARNG	10,397	0	0	0	N	N	Y	Y	Y	N	N	N	N	N	N	Y
FAA Radio Tower Site	US	CO	ARNG	13	0	0	0	N	N	N	N	N	N	N	N	N	N	N	Y
Fahr River Crossing	OS	Germany	USAREUR	3	0	0	0	N	N	N	N	N	N	N	N	N	N	N	Y
Felicity	US	OH	ARNG	1	0	0	0	N	N	N	N	N	N	N	N	N	N	N	Y
Florence Training Site	US	AZ	ARNG	25,633	61	0	0	N	N	Y	Y	Y	N	N	Y	N	N	N	Y
Floyd Edsal Training Center	US	NV	ARNG	1,525	0	0	0	N	N	Y	N	Y	N	N	N	N	N	N	Y
Foce del Reno	OS	Italy	USAREUR	8,941	0	0	0	N	N	N	Y	Y	N	N	N	N	N	N	N
Foce Fume Serchio	OS	Italy	USAREUR	163	0	0	0	N	N	N	Y	Y	N	N	N	N	N	N	N
Fontaniva	OS	Italy	USAREUR	155	0	0	0	N	N	Y	N	N	N	N	N	N	N	N	N
Fort A.P. Hill	US	VA	MDW	72,764	928	0	0	N	N	Y	Y	Y	N	N	N	N	N	N	Y
Fort Allen	US	PR	ARNG	423	0	0	0	N	N	Y	N	N	N	N	N	N	N	N	Y
Fort Belvoir	US	VA	MDW	2,178	0	0	0	N	N	Y	Y	N	N	N	N	N	N	N	Y
Fort Benning	US	GA	TRADOC	165,779	422	0	0	N	N	Y	Y	Y	N	N	Y	N	N	N	Y
Fort Bliss	US	TX	TRADOC	1,083,435	1,597	0	0	N	N	Y	Y	Y	N	N	Y	N	N	N	Y
Fort Bragg	US	NC	FORSCOM	196,193	1,718	0	0	N	N	Y	Y	Y	N	N	Y	N	N	N	Y
Fort Campbell	US	KY, TN	FORSCOM	94,501	931	0	0	N	N	Y	Y	Y	N	N	Y	N	N	N	Y
Fort Carson	US	CO	FORSCOM	125,112	1,153	0	0	N	N	Y	Y	Y	N	N	Y	N	N	N	Y
Fort Chaffee	US	AR	ARNG	49,948	81	0	0	N	N	Y	Y	Y	N	N	N	N	N	N	Y
Fort Custer Training Center	US	MI	ARNG	7,500	0	0	0	N	N	Y	Y	Y	N	N	Y	N	N	N	Y
Fort Devens	US	MA	USARC	4,633	0	0	0	N	N	Y	Y	Y	N	N	N	N	N	N	Y
Fort Dix	US	NJ	USARC	27,313	104	0	0	N	N	N	Y	Y	N	N	N	N	N	N	Y
Fort Drum	US	NY	FORSCOM	96,652	299	0	0	N	N	Y	Y	Y	N	N	Y	N	N	N	Y
Fort Eustis/ Fort Story	US	VA	TRADOC	5,060	0	0	0	N	N	Y	Y	Y	N	N	N	N	N	N	Y

Table A-1: Army Training and Testing Range Complex Inventory (Continued)

RANGE COMPLEX	UNITED STATES (US) OR OVERSEAS (OS)	STATE OR COUNTRY	COMMAND/ COMPONENT	LAND AREA FOR RANGES (ACRES)	SPECIAL USE AIRSPACE (SQ NM)	SEA SURFACE AREA (SQ NM)	UNDERWATER TRACKING AREA (SQ NM)	RANGE TYPE											
								AIR-TO-AIR OR AIR-TO-SURFACE	AIR-TO-GROUND	LAND MANEUVER	LAND IMPACT AREA	LAND FIRING RANGE	C2W/EW	OCEAN OPERATING AREA	MOUT	UNDERWATER TRACKING RANGE	AMPHIBIOUS AREA	OTHER	
Fort George G. Meade	US	MD	MDW	129	0	0	0	N	N	Y	N	N	N	N	N	N	N	N	Y
Fort Gillem	US	GA	FORSCOM	472	0	0	0	N	N	Y	N	N	N	N	N	N	N	N	Y
Fort Gordon	US	GA	TRADOC	51,121	0	0	0	N	N	Y	Y	Y	N	N	Y	N	N	N	Y
Fort Greely/ Donnelly Training Area	US	AK	USARPAC	655,182	0	0	0	N	N	Y	Y	Y	N	N	N	N	N	N	Y
Fort Hood	US	TX	FORSCOM	196,931	500	0	0	N	N	Y	Y	Y	N	N	Y	N	N	N	Y
Fort Huachuca	US	AZ	TRADOC	78,999	815	0	0	N	N	Y	Y	Y	N	N	Y	N	N	N	Y
Fort Hunter Liggett	US	CA	USARC	161,820	113	0	0	N	N	Y	N	Y	N	N	N	N	N	N	Y
Fort Indiantown Gap	US	PA	ARNG	14,564	0	0	0	N	N	Y	Y	Y	N	N	Y	N	N	N	Y
Fort Irwin	US	CA	FORSCOM	634,481	560	0	0	N	N	Y	Y	Y	N	N	N	N	N	N	Y
Fort Jackson	US	SC	TRADOC	51,866	0	0	0	N	N	Y	Y	Y	N	N	Y	N	N	N	Y
Fort Knox	US	KY	TRADOC	98,452	113	0	0	N	N	Y	Y	Y	N	N	Y	N	N	N	Y
Fort Leavenworth	US	KS	TRADOC	4,285	0	0	0	N	N	Y	N	Y	N	N	N	N	N	N	Y
Fort Lee	US	VA	TRADOC	2,307	69	0	0	N	N	Y	Y	Y	N	N	N	N	N	N	Y
Fort Leonard Wood	US	MO	TRADOC	55,997	175	0	0	N	N	Y	Y	Y	N	N	N	N	N	N	Y
Fort Lewis	US	WA	FORSCOM	77,881	0	0	0	N	N	Y	Y	Y	N	N	Y	N	N	N	Y
Fort McClellan (Pelham Range)	US	AL	ARNG	22,199	0	0	0	N	N	Y	Y	Y	N	N	Y	N	N	N	Y
Fort McCoy	US	WI	USARC	126,378	0	0	0	N	N	Y	Y	Y	N	N	N	N	N	N	Y
Fort McPherson	US	GA	FORSCOM	21	0	0	0	N	N	Y	N	Y	N	N	N	N	N	N	Y
Fort Meade	US	SD	ARNG	6,090	0	0	0	N	N	Y	N	N	N	N	N	N	N	N	N
Fort Mifflin	US	PA	ARNG	26	0	0	0	N	N	N	N	N	N	N	N	N	N	N	Y
Fort Monmouth	US	NJ	AMC	104	0	0	0	N	N	Y	N	Y	N	N	Y	N	N	N	Y
Fort Morgan Airport	US	CO	ARNG	19	0	0	0	N	N	N	N	N	N	N	N	N	N	N	Y
Fort Nathaniel Greene	US	RI	USARC	96	0	0	0	N	N	Y	N	Y	N	N	N	N	N	N	Y
Fort Pickett	US	VA	ARNG	44,841	161	0	0	N	N	Y	Y	Y	N	N	Y	N	N	N	Y

Table A-1: Army Training and Testing Range Complex Inventory (Continued)

RANGE COMPLEX	UNITED STATES (US) OR OVERSEAS (OS)	STATE OR COUNTRY	COMMAND/ COMPONENT	LAND AREA FOR RANGES (ACRES)	SPECIAL USE AIRSPACE (SQ NM)	SEA SURFACE AREA (SQ NM)	UNDERWATER TRACKING AREA (SQ NM)	RANGE TYPE										
								AIR-TO-AIR OR AIR-TO-SURFACE	AIR-TO-GROUND	LAND MANEUVER	LAND IMPACT AREA	LAND FIRING RANGE	C2W/EW	OCEAN OPERATING AREA	MOUT	UNDERWATER TRACKING RANGE	AMPHIBIOUS AREA	OTHER
Fort Polk	US	LA	FORSCOM	182,551	5,471	0	0	N	N	Y	Y	Y	N	N	Y	N	N	Y
Fort Richardson	US	AK	USARPAC	53,436	163	0	0	N	N	Y	Y	Y	N	N	N	N	N	Y
Fort Riley	US	KS	FORSCOM	92,161	107	0	0	N	N	Y	Y	Y	N	N	Y	N	N	Y
Fort Rucker	US	AL	TRADOC	61,378	0	0	0	N	N	Y	Y	Y	N	N	N	N	N	Y
Fort Ruger	US	HI	USARPAC	311	0	0	0	N	N	Y	N	N	N	N	N	N	N	N
Fort Sam Houston/Camp Bullis	US	TX	MEDCOM	27,311	0	0	0	N	N	Y	Y	Y	N	N	Y	N	N	Y
Fort Sill	US	OK	TRADOC	85,922	153	0	0	N	N	Y	Y	Y	N	N	Y	N	N	Y
Fort Stewart	US	GA	FORSCOM	271,567	556	0	0	N	N	Y	Y	Y	N	N	Y	N	N	Y
Fort Wainwright	US	AK	USARPAC	911,698	0	0	0	N	N	Y	Y	Y	N	N	N	N	N	Y
Fort William Henry Harrison	US	MT	ARNG	6,435	0	0	0	N	N	Y	N	Y	N	N	Y	N	N	Y
Fort Wingate Missile Launch Complex	US	NM	ATEC	6,526	0	0	0	N	N	N	N	Y	N	N	N	N	N	N
Fort Wolters	US	TX	ARNG	4,012	0	0	0	N	N	Y	Y	Y	N	N	N	N	N	Y
Fountain Inn TS	US	SC	ARNG	21	0	0	0	N	N	Y	N	N	N	N	N	N	N	N
Freeman Field Police Range	US	IN	ARNG	2	0	0	0	N	N	N	N	Y	N	N	N	N	N	N
Friedberg LTA	OS	Germany	USAREUR	8,519	0	0	0	N	N	Y	N	Y	N	N	N	N	N	Y
Frye Mountain Training Site	US	ME	ARNG	5,137	0	0	0	N	N	Y	N	Y	N	N	N	N	N	N
Gardiner	US	ME	ARNG	106	0	0	0	N	N	Y	N	Y	N	N	N	N	N	Y
Garrison WET Site	US	ND	ARNG	765	0	0	0	N	N	Y	N	N	N	N	N	N	N	N
Gerlachshausen Swim Site	OS	Germany	USAREUR	0	0	0	0	N	N	N	N	N	N	N	N	N	N	N
Gerstle River Training Area	US	AK	USARPAC	20,589	0	0	0	N	N	Y	N	N	N	N	N	N	N	N
Giessen Depot Training Area	OS	Germany	USAREUR	137	0	0	0	N	N	Y	N	N	N	N	N	N	N	N
Gila Bend Training Site	US	AZ	ARNG	637	0	0	0	N	N	N	N	N	N	N	N	N	N	Y

Table A-1: Army Training and Testing Range Complex Inventory (Continued)

RANGE COMPLEX	UNITED STATES (US) OR OVERSEAS (OS)	STATE OR COUNTRY	COMMAND/ COMPONENT	LAND AREA FOR RANGES (ACRES)	SPECIAL USE AIRSPACE (SQ NM)	SEA SURFACE AREA (SQ NM)	UNDERWATER TRACKING AREA (SQ NM)	RANGE TYPE											
								AIR-TO-AIR OR AIR-TO-SURFACE	AIR-TO-GROUND	LAND MANEUVER	LAND IMPACT AREA	LAND FIRING RANGE	C2W/EW	OCEAN OPERATING AREA	MOUT	UNDERWATER TRACKING RANGE	AMPHIBIOUS AREA	OTHER	
Gimbols	OS	Korea	EUSA	3,019	0	0	0	N	N	Y	N	N	N	N	N	N	N	N	N
Goodpasture DZ	US	CO	ARNG	178	0	0	0	N	N	N	N	N	N	N	N	N	N	N	Y
Grafenwoehr	OS	Germany	USAREUR	31,488	0	0	0	N	N	Y	Y	Y	N	N	N	N	N	N	Y
Great Bend LTA	US	KS	USARC	1	0	0	0	N	N	N	N	N	N	N	N	N	N	N	Y
Green River Launch Complex	US	UT	ATEC	3,944	0	0	0	N	N	N	N	Y	N	N	N	N	N	N	N
Greenlief Training Site	US	NE	ARNG	3,154	0	0	0	N	N	Y	N	Y	N	N	Y	N	N	N	Y
Grossauheim	OS	Germany	USAREUR	46	0	0	0	N	N	N	N	N	N	N	N	N	N	N	Y
Grossostheim LTA	OS	Germany	USAREUR	1,557	0	0	0	N	N	Y	N	N	N	N	N	N	N	N	N
Guilderland	US	NY	ARNG	291	0	0	0	N	N	N	N	Y	N	N	N	N	N	N	Y
Gunpowder MIL RES	US	MD	ARNG	227	0	0	0	N	N	Y	N	N	N	N	N	N	N	N	Y
Happy Valley (Carlsbad)	US	NM	ARNG	721	0	0	0	N	N	Y	N	Y	N	N	N	N	N	N	N
Haws Crossroads WET Site	US	TN	USARC	103	0	0	0	N	N	Y	N	N	N	N	N	N	N	N	N
Hawthorne Army Depot	US	NV	AMC	35,633	0	0	0	N	N	Y	Y	Y	N	N	N	N	N	N	N
Hayden Lake LTA	US	ID	USARC	612	0	0	0	N	N	N	N	Y	N	N	N	N	N	N	N
Hayford Pit LTA	US	WA	USARC	24	0	0	0	N	N	N	N	N	N	N	N	N	N	N	Y
Henry H. Cobb Jr. - Pelham	US	AL	ARNG	22,139	0	0	0	N	N	Y	Y	Y	N	N	N	N	N	N	Y
Hidden Valley LTA	US	KY	ARNG	535	0	0	0	N	N	Y	N	N	N	N	N	N	N	N	N
Hilltop Range	US	IN	ARNG	1	0	0	0	N	N	N	N	Y	N	N	N	N	N	N	N
Hobbs	US	NM	ARNG	262	0	0	0	N	N	Y	N	N	N	N	N	N	N	N	N
Hodges TS	US	SC	ARNG	20	0	0	0	N	N	Y	N	N	N	N	N	N	N	N	N
Hofenfels	OS	Germany	USAREUR	38,965	0	0	0	N	N	Y	N	Y	N	N	Y	N	N	N	Y
Hohe Warte	OS	Germany	USAREUR	160	0	0	0	N	N	Y	N	N	N	N	N	N	N	N	N

Table A-1: Army Training and Testing Range Complex Inventory (Continued)

RANGE COMPLEX	UNITED STATES (US) OR OVERSEAS (OS)	STATE OR COUNTRY	COMMAND/ COMPONENT	LAND AREA FOR RANGES (ACRES)	SPECIAL USE AIRSPACE (SQ NM)	SEA SURFACE AREA (SQ NM)	UNDERWATER TRACKING AREA (SQ NM)	RANGE TYPE										
								AIR-TO-AIR OR AIR-TO-SURFACE	AIR-TO-GROUND	LAND MANEUVER	LAND IMPACT AREA	LAND FIRING RANGE	C2W/EW	OCEAN OPERATING AREA	MOUT	UNDERWATER TRACKING RANGE	AMPHIBIOUS AREA	OTHER
Hollis Plains Training Site	US	ME	ARNG	412	0	0	0	N	N	Y	N	Y	N	N	N	N	N	Y
Honopou LTA	US	HI	ARNG	106	0	0	0	N	N	Y	N	N	N	N	N	N	N	N
Horsetooth Reservoir	US	CO	ARNG	5,012	0	0	0	N	N	N	N	N	N	N	N	N	N	Y
Hunter Army Airfield	US	GA	FORSCOM	2,742	0	0	0	N	N	Y	N	Y	N	N	N	N	N	Y
Idaho Falls Training Site	US	ID	ARNG	1,081	0	0	0	N	N	Y	N	Y	N	N	N	N	N	N
Idaho Launch Complex	US	ID	A TEC	315	0	0	0	N	N	N	N	Y	N	N	N	N	N	N
Ike Skelton Training Site	US	MO	ARNG	24	0	0	0	N	N	Y	N	Y	N	N	N	N	N	Y
Indiana Range Wet Site	US	PA	ARNG	165	0	0	0	N	N	Y	N	Y	N	N	N	N	N	N
Iowa AAP	US	IA	AMC	1,338	0	0	0	N	N	Y	N	Y	N	N	N	N	N	Y
Jefferson Proving Ground	US	IN	AMC	1,050	0	0	0	N	N	N	Y	N	N	N	N	N	N	N
John Sevier Range	US	TN	ARNG	6	0	0	0	N	N	N	N	Y	N	N	N	N	N	N
Joliet Training Center	US	IL	USARC	3,446	0	0	0	N	N	Y	Y	Y	N	N	N	N	N	Y
Kahuku Training Area	US	HI	USARPAC	9,457	0	0	0	N	N	Y	N	N	N	N	N	N	N	Y
Kalepa LTA	US	HI	ARNG	902	0	0	0	N	N	Y	N	N	N	N	N	N	N	N
Kanaio Training Center	US	HI	ARNG	4,612	0	0	0	N	N	Y	N	Y	N	N	N	N	N	N
Kansas AAP	US	KS	AMC	157	0	0	0	N	N	Y	N	Y	N	N	N	N	N	N
Kansas Regional Training Site (Smoky Hill)	US	KS	ARNG	3,430	0	0	0	N	N	Y	Y	Y	N	N	N	N	N	Y
Katterbach Kaserne	OS	Germany	USAREUR	49	0	0	0	N	N	N	N	N	N	N	N	N	N	Y
Kawailoa Training Area	US	HI	USARPAC	23,665	0	0	0	N	N	Y	N	N	N	N	N	N	N	Y
Keamuku LTA	US	HI	USARPAC	22,640	0	0	0	N	N	Y	N	N	N	N	N	N	N	N
Keaukaha MIL RES	US	HI	ARNG	434	0	0	0	N	N	Y	Y	Y	N	N	N	N	N	N

Table A-1: Army Training and Testing Range Complex Inventory (Continued)

RANGE COMPLEX	UNITED STATES (US) OR OVERSEAS (OS)	STATE OR COUNTRY	COMMAND/ COMPONENT	LAND AREA FOR RANGES (ACRES)	SPECIAL USE AIRSPACE (SQ NM)	SEA SURFACE AREA (SQ NM)	UNDERWATER TRACKING AREA (SQ NM)	RANGE TYPE											
								AIR-TO-AIR OR AIR-TO-SURFACE	AIR-TO-GROUND	LAND MANEUVER	LAND IMPACT AREA	LAND FIRING RANGE	C2W/EW	OCEAN OPERATING AREA	MOUT	UNDERWATER TRACKING RANGE	AMPHIBIOUS AREA	OTHER	
Kekaha	US	HI	ARNG	61	0	0	0	N	N	Y	N	Y	N	N	N	N	N	N	N
Kekaha LTA	US	HI	ARNG	3,193	0	0	0	N	N	Y	N	N	N	N	N	N	N	N	N
Kelly Canyon TS	US	ID	ARNG	3,826	0	0	0	N	N	Y	N	N	N	N	N	N	N	N	N
Keystone Rifle Range	US	CA	ARNG	189	0	0	0	N	N	Y	N	Y	N	N	N	N	N	N	N
Keystone Training Site	US	PA	USARC	452	0	0	0	N	N	Y	N	Y	N	N	N	N	N	N	Y
Kingsbury LTA	US	IN	USARC	919	0	0	0	N	N	Y	N	N	N	N	N	N	N	N	N
Kunigundenruh LTA	OS	Germany	USAREUR	113	0	0	0	N	N	Y	N	N	N	N	N	N	N	N	N
La Reforma Training Site	US	TX	ARNG	4,264	0	0	0	N	N	Y	N	Y	N	N	N	N	N	N	N
Lake City AAP	US	MO	AMC	696	0	0	0	N	N	Y	N	Y	N	N	N	N	N	N	Y
Lampertheim Training Area	OS	Germany	USAREUR	4,143	0	0	0	N	N	Y	Y	Y	N	N	N	N	N	N	Y
Lander Local Training Area	US	WY	ARNG	1,353	0	0	0	N	N	Y	N	Y	N	N	N	N	N	N	N
Lauderick Creek MIL RES	US	MD	ARNG	1,065	0	0	0	N	N	Y	N	N	N	N	N	N	N	N	N
Lebanon Readiness Center	US	NH	ARNG	0	0	0	0	N	N	N	N	N	N	N	N	N	N	N	Y
Leeman Field LTA	US	VA	ARNG	24	0	0	0	N	N	N	N	N	N	N	N	N	N	N	Y
Leroy Dilka Land	US	CO	ARNG	2	0	0	0	N	N	N	N	N	N	N	N	N	N	N	Y
Letterkenny Army Depot	US	PA	AMC	9	0	0	0	N	N	N	N	Y	N	N	N	N	N	N	N
Lexington	US	OK	ARNG	317	0	0	0	N	N	Y	N	N	N	N	N	N	N	N	N
Limestone Hills Training Area	US	MT	ARNG	20,413	0	0	0	N	N	Y	Y	Y	N	N	N	N	N	N	Y
Lone Star AAP	US	TX	AMC	232	0	0	0	N	N	N	N	Y	N	N	N	N	N	N	N
Longare	OS	Italy	USAREUR	15	0	0	0	N	N	Y	N	N	N	N	N	N	N	N	Y
Longhorn AAP	US	TX	AMC	0	0	0	0	N	N	N	N	Y	N	N	N	N	N	N	N
Los Alamitos JFTB	US	CA	ARNG	397	0	0	0	N	N	N	N	Y	N	N	N	N	N	N	Y
Lovell Local Training Area	US	WY	ARNG	3,606	0	0	0	N	N	Y	N	Y	N	N	N	N	N	N	Y

Table A-1: Army Training and Testing Range Complex Inventory (Continued)

RANGE COMPLEX	UNITED STATES (US) OR OVERSEAS (OS)	STATE OR COUNTRY	COMMAND/ COMPONENT	LAND AREA FOR RANGES (ACRES)	SPECIAL USE AIRSPACE (SQ NM)	SEA SURFACE AREA (SQ NM)	UNDERWATER TRACKING AREA (SQ NM)	RANGE TYPE											
								AIR-TO-AIR OR AIR-TO-SURFACE	AIR-TO-GROUND	LAND MANEUVER	LAND IMPACT AREA	LAND FIRING RANGE	C2W/EW	OCEAN OPERATING AREA	MOUT	UNDERWATER TRACKING RANGE	AMPHIBIOUS AREA	OTHER	
LTA 6910	OS	Germany	USAREUR	104	0	0	0	N	N	Y	N	N	N	N	N	N	N	N	N
LTA Vaap	US	TN	USARC	195	0	0	0	N	N	Y	N	N	N	N	N	N	N	N	N
Ltc Hernan G. Pesquera Usar Center	US	PR	USARC	4	0	0	0	N	N	N	N	N	N	N	N	N	N	N	Y
Mabe Range LTA	US	VA	ARNG	1,726	0	0	0	N	N	N	N	Y	N	N	N	N	N	N	Y
Macon Training Site	US	MO	ARNG	3,095	0	0	0	N	N	Y	N	Y	N	N	Y	N	N	N	Y
Mainz-Layenhof	OS	Germany	USAREUR	249	0	0	0	N	N	N	N	N	N	N	Y	N	N	N	N
Makua MIL RES	US	HI	USARPAC	4,245	0	0	0	N	N	N	Y	Y	N	N	N	N	N	N	Y
Maluhia LTA	US	HI	ARNG	70	0	0	0	N	N	Y	N	N	N	N	N	N	N	N	N
Mankato Local Training Area	US	MN	USARC	20	0	0	0	N	N	Y	N	N	N	N	N	N	N	N	N
Marion LTA	US	OH	USARC	122	0	0	0	N	N	Y	N	N	N	N	N	N	N	N	N
Marseilles Training Site	US	IL	ARNG	2,741	0	0	0	N	N	Y	Y	Y	N	N	N	N	N	N	Y
McAlester AAP	US	OK	AMC	2,914	0	0	0	N	N	Y	Y	Y	N	N	N	N	N	N	Y
McCrary Training Center	US	SC	ARNG	20,316	0	0	0	N	N	Y	N	Y	N	N	N	N	N	N	Y
Mead Training Site	US	NE	ARNG	1,185	0	0	0	N	N	Y	N	Y	N	N	N	N	N	N	Y
Messell Small Arms Range	OS	Germany	USAREUR	25	0	0	0	N	N	N	N	Y	N	N	N	N	N	N	Y
Michelfeld	OS	Germany	USAREUR	92	0	0	0	N	N	Y	N	N	N	N	N	N	N	N	N
Milan Volunteer Training Site	US	TN	ARNG	2,364	0	0	0	N	N	Y	N	Y	N	N	N	N	N	N	Y
Mitchell Training Area	US	SD	ARNG	1	0	0	0	N	N	N	N	Y	N	N	N	N	N	N	N
Mobridge Training Area	US	SD	ARNG	119	0	0	0	N	N	Y	N	N	N	N	N	N	N	N	Y
Monte Carpegna	OS	Italy	USAREUR	6,488	0	0	0	N	N	Y	Y	N	N	N	N	N	N	N	N
Monte Ciarlec	OS	Italy	USAREUR	7,925	0	0	0	N	N	Y	Y	N	N	N	N	N	N	N	N
Monte Romano	OS	Italy	USAREUR	10,207	0	0	0	N	N	Y	Y	Y	N	N	N	N	N	N	Y
Moosehorn	US	ME	ARNG	0	0	0	0	N	N	N	N	Y	N	N	N	N	N	N	N

Table A-1: Army Training and Testing Range Complex Inventory (Continued)

RANGE COMPLEX	UNITED STATES (US) OR OVERSEAS (OS)	STATE OR COUNTRY	COMMAND/ COMPONENT	LAND AREA FOR RANGES (ACRES)	SPECIAL USE AIRSPACE (SQ NM)	SEA SURFACE AREA (SQ NM)	UNDERWATER TRACKING AREA (SQ NM)	RANGE TYPE											
								AIR-TO-AIR OR AIR-TO-SURFACE	AIR-TO-GROUND	LAND MANEUVER	LAND IMPACT AREA	LAND FIRING RANGE	C2W/EW	OCEAN OPERATING AREA	MOUT	UNDERWATER TRACKING RANGE	AMPHIBIOUS AREA	OTHER	
MOTSU	US	NC	MTMC	7	0	0	0	N	N	Y	N	Y	N	N	N	N	N	N	N
Mountwood Park	US	WV	ARNG	3,109	0	0	0	N	N	Y	N	N	N	N	N	N	N	N	N
MTA Camp Dodge	US	IA	ARNG	3,717	0	0	0	N	N	Y	Y	Y	N	N	Y	N	N	Y	
MTA SMR CP Pendleton	US	VA	ARNG	89	0	0	0	N	N	Y	N	Y	N	N	N	N	N	Y	
MTA Stead FAC	US	NV	ARNG	207	0	0	0	N	N	Y	N	Y	N	N	N	N	N	N	
New Castle Rifle Range	US	DE	ARNG	93	0	0	0	N	N	Y	N	Y	N	N	N	N	N	Y	
New River Valley Training Site	US	VA	USARC	88	0	0	0	N	N	N	N	N	N	N	N	N	N	Y	
Newark LTA, NY	US	NY	ARNG	100	0	0	0	N	N	Y	N	N	N	N	N	N	N	N	
Newfane WET Site	US	NY	USARC	3	0	0	0	N	N	N	N	N	N	N	N	N	N	Y	
Newport Chemical Depot	US	IN	AMC	0	0	0	0	N	N	N	N	Y	N	N	N	N	N	N	
Newton Falls (RAAP)	US	OH	ARNG	2,879	0	0	0	N	N	Y	N	Y	N	N	N	N	N	Y	
NGTC at Sea Girt	US	NJ	ARNG	120	0	0	0	N	N	Y	Y	Y	N	N	N	N	N	Y	
NH NG Training Site	US	NH	ARNG	94	0	0	0	N	N	N	N	N	N	N	N	N	N	Y	
Nounou LTA	US	HI	ARNG	1,720	0	0	0	N	N	Y	N	N	N	N	N	N	N	N	
Ocala Armory	US	FL	ARNG	0	0	0	0	N	N	N	N	N	N	N	N	N	N	Y	
Offersheim Small Arms Range	OS	Germany	USAREUR	3	0	0	0	N	N	Y	N	Y	N	N	N	N	N	Y	
Ogden Local Training Area	US	UT	USARC	132	0	0	0	N	N	N	N	N	N	N	N	N	N	Y	
Onate Training Site	US	NM	ARNG	76	0	0	0	N	N	Y	N	Y	N	N	Y	N	N	Y	
Orchard (Gowen Field) Training Area	US	ID	ARNG	138,914	0	0	0	N	N	Y	Y	Y	N	N	N	N	N	Y	
Oxford	US	ME	ARNG	58	0	0	0	N	N	Y	N	N	N	N	N	N	N	N	
Paisley LTA	US	FL	ARNG	11,279	0	0	0	N	N	Y	N	N	N	N	N	N	N	N	

Table A-1: Army Training and Testing Range Complex Inventory (Continued)

RANGE COMPLEX	UNITED STATES (US) OR OVERSEAS (OS)	STATE OR COUNTRY	COMMAND/ COMPONENT	LAND AREA FOR RANGES (ACRES)	SPECIAL USE AIRSPACE (SQ NM)	SEA SURFACE AREA (SQ NM)	UNDERWATER TRACKING AREA (SQ NM)	RANGE TYPE										
								AIR-TO-AIR OR AIR-TO-SURFACE	AIR-TO-GROUND	LAND MANEUVER	LAND IMPACT AREA	LAND FIRING RANGE	C2W/EW	OCEAN OPERATING AREA	MOUT	UNDERWATER TRACKING RANGE	AMPHIBIOUS AREA	OTHER
Papago Park MIL RES	US	AZ	ARNG	103	0	0	0	N	N	N	N	Y	N	N	N	N	N	Y
Parks RFTA	US	CA	USARC	1,994	0	0	0	N	N	Y	Y	Y	N	N	N	N	N	Y
Pau'Uilo LTA	US	HI	ARNG	45	0	0	0	N	N	Y	N	N	N	N	N	N	N	N
Peaceful Valley Ranch	US	CO	ARNG	1,205	0	0	0	N	N	Y	N	N	N	N	N	N	N	N
Peason Ridge	US	LA	FORSCOM	45,472	0	0	0	N	N	Y	Y	Y	N	N	N	N	N	Y
Peterborough Readiness Center	US	NH	ARNG	0	0	0	0	N	N	N	N	N	N	N	N	N	N	Y
Picacho Training Site	US	AZ	ARNG	352	0	0	0	N	N	N	N	N	N	N	N	N	N	Y
Picatiny Arsenal	US	NJ	AMC	4,545	0	0	0	N	N	Y	N	Y	N	N	N	N	N	Y
Pickens TS	US	SC	ARNG	9	0	0	0	N	N	Y	N	N	N	N	N	N	N	N
Pierre Training Area	US	SD	ARNG	5	0	0	0	N	N	N	N	Y	N	N	N	N	N	N
Pine Bluff Arsenal	US	AR	AMC	99	0	0	0	N	N	N	Y	Y	N	N	N	N	N	Y
Pinon Canyon Maneuver Site	US	CO	FORSCOM	224,544														
Platte Training Area	US	SD	ARNG	40	0	0	0	N	N	Y	N	N	N	N	N	N	N	N
Plymouth Training Site	US	ME	ARNG	306	0	0	0	N	N	Y	N	Y	N	N	N	N	N	Y
Pocatello Airport Local Training Area	US	ID	USARC	9	0	0	0	N	N	Y	N	N	N	N	N	N	N	N
Pocatello Training Site	US	ID	ARNG	718	0	0	0	N	N	Y	N	Y	N	N	N	N	N	N
Podeldorf LTA	OS	Germany	USAREUR	1,105	0	0	0	N	N	Y	N	Y	N	N	N	N	N	Y
Pohakuloa Training Area	US	HI	USARPAC	132,428	0	0	0	N	N	Y	Y	Y	N	N	N	N	N	Y
Poverty Flats Training Area	US	UT	ARNG	448	0	0	0	N	N	Y	N	N	N	N	N	N	N	N
Price Training Area	US	UT	ARNG	159	0	0	0	N	N	N	N	N	N	N	N	N	N	Y
P-Series	OS	Italy	USAREUR	5,291	0	0	0	N	N	Y	N	N	N	N	N	N	N	N

Table A-1: Army Training and Testing Range Complex Inventory (Continued)

RANGE COMPLEX	UNITED STATES (US) OR OVERSEAS (OS)	STATE OR COUNTRY	COMMAND/ COMPONENT	LAND AREA FOR RANGES (ACRES)	SPECIAL USE AIRSPACE (SQ NM)	SEA SURFACE AREA (SQ NM)	UNDERWATER TRACKING AREA (SQ NM)	RANGE TYPE											
								AIR-TO-AIR OR AIR-TO-SURFACE	AIR-TO-GROUND	LAND MANEUVER	LAND IMPACT AREA	LAND FIRING RANGE	C2W/EW	OCEAN OPERATING AREA	MOUT	UNDERWATER TRACKING RANGE	AMPHIBIOUS AREA	OTHER	
Pueblo Chemical Depot	US	CO	AMC	94	0	0	0	N	N	N	N	Y	N	N	N	N	N	N	Y
Puu Kapele LTA	US	HI	ARNG	1,109	0	0	0	N	N	Y	N	N	N	N	N	N	N	N	N
Puu Luahine (Red Hill) LTA	US	HI	ARNG	8,314	0	0	0	N	N	Y	N	N	N	N	N	N	N	N	N
Puu Pa LTA	US	HI	ARNG	13,243	0	0	0	N	N	Y	N	N	N	N	N	N	N	N	N
Pu'Unene LTA	US	HI	ARNG	1,610	0	0	0	N	N	Y	N	N	N	N	N	N	N	N	N
Racine County Line Range	US	WI	ARNG	15	0	0	0	N	N	N	N	Y	N	N	N	N	N	N	N
Raleigh County Firing Range	US	WV	ARNG	1	0	0	0	N	N	N	N	Y	N	N	N	N	N	N	N
Ramey Usar Center LTA	US	PR	USARC	53	0	0	0	N	N	N	N	N	N	N	N	N	N	N	Y
Ravenna Training and Logistics Site	US	OH	ARNG	4,044	0	0	0	N	N	Y	Y	Y	N	N	N	N	N	N	Y
Ray Barracks Training Area	OS	Germany	USAREUR	21	0	0	0	N	N	Y	N	Y	N	N	N	N	N	N	Y
Raytown Training Site	US	MO	ARNG	51	0	0	0	N	N	Y	N	N	N	N	N	N	N	N	N
Red River Army Depot	US	TX	AMC	165	0	0	0	N	N	N	N	Y	N	N	N	N	N	N	Y
Redfield Training Area	US	SD	ARNG	174	0	0	0	N	N	Y	N	N	N	N	N	N	N	N	N
Redstone Arsenal	US	AL	AMC	25,505	25	0	0	N	N	Y	N	Y	N	N	N	N	N	N	N
Reese Range Complex	OS	Germany	USAREUR	18	0	0	0	N	N	N	N	Y	N	N	N	N	N	N	Y
Rheinblick LTA	OS	Germany	USAREUR	44	0	0	0	N	N	N	N	Y	N	N	N	N	N	N	Y
Ridgeway	US	PA	ARNG	7	0	0	0	N	N	Y	N	Y	N	N	N	N	N	N	Y
Rio Rancho	US	NM	ARNG	96	0	0	0	N	N	N	N	Y	N	N	N	N	N	N	Y
Rittenhouse Training Site	US	AZ	ARNG	198	0	0	0	N	N	Y	N	N	N	N	N	N	N	N	N
Riverside	OS	Italy	USAREUR	3	0	0	0	N	N	Y	N	N	N	N	N	N	N	N	N
Rivoli Bianchi	OS	Italy	USAREUR	235	0	0	0	N	N	N	N	Y	N	N	N	N	N	N	N
Roswell	US	NM	ARNG	3,878	0	0	0	N	N	Y	N	Y	N	N	N	N	N	N	N
Rottershausen	OS	Germany	USAREUR	131	0	0	0	N	N	Y	N	N	N	N	N	N	N	N	N

Table A-1: Army Training and Testing Range Complex Inventory (Continued)

RANGE COMPLEX	UNITED STATES (US) OR OVERSEAS (OS)	STATE OR COUNTRY	COMMAND/ COMPONENT	LAND AREA FOR RANGES (ACRES)	SPECIAL USE AIRSPACE (SQ NM)	SEA SURFACE AREA (SQ NM)	UNDERWATER TRACKING AREA (SQ NM)	RANGE TYPE										
								AIR-TO-AIR OR AIR-TO-SURFACE	AIR-TO-GROUND	LAND MANEUVER	LAND IMPACT AREA	LAND FIRING RANGE	C2W/EW	OCEAN OPERATING AREA	MOUT	UNDERWATER TRACKING RANGE	AMPHIBIOUS AREA	OTHER
Safford Training Site	US	AZ	ARNG	399	0	0	0	N	N	Y	N	N	N	N	N	N	N	N
San Giorgio	OS	Italy	USAREUR	68	0	0	0	N	N	N	N	N	N	N	Y	N	N	N
San Juan National Forest	US	CO	ARNG	629,816	0	0	0	N	N	Y	N	N	N	N	N	N	N	N
Sand Dunes	OS	Germany	USAREUR	105	0	0	0	N	N	Y	N	N	N	N	N	N	N	N
Santa Severa	OS	Italy	USAREUR	100	0	0	0	N	N	N	Y	Y	N	N	N	N	N	N
Schofield Barracks MIL RES	US	HI	USARPAC	4,990	0	0	0	N	N	Y	Y	Y	N	N	Y	N	N	Y
Schweinfurt	OS	Germany	USAREUR	6,326	0	0	0	N	N	Y	Y	Y	N	N	N	N	N	Y
Schwetzingen LTA	OS	Germany	USAREUR	249	0	0	0	N	N	Y	N	N	N	N	N	N	N	Y
Scranton (Leach Range)	US	PA	AMC	101	0	0	0	N	N	Y	N	Y	N	N	N	N	N	N
Seagoville LTA	US	TX	USARC	198	0	0	0	N	N	Y	N	Y	N	N	N	N	N	Y
Sheridan Local TA	US	WY	ARNG	3,980	0	0	0	N	N	Y	N	Y	N	N	N	N	N	N
Sierra Army Depot	US	CA	AMC	4,722	0	0	0	N	N	Y	N	Y	N	N	N	N	N	Y
Sioux Falls Airport Training Area	US	SD	ARNG	15	0	0	0	N	N	Y	N	Y	N	N	N	N	N	N
Smyrna Volunteer Training Site	US	TN	ARNG	557	0	0	0	N	N	Y	N	Y	N	N	N	N	N	Y
Snake Creek Training Site	US	FL	ARNG	295	0	0	0	N	N	Y	N	N	N	N	N	N	N	N
South Charleston	US	WV	ARNG	1	0	0	0	N	N	N	N	Y	N	N	N	N	N	N
South Hauptmoor LTA	OS	Germany	USAREUR	268	0	0	0	N	N	Y	N	N	N	N	N	N	N	N
Springfield Training Site	US	IL	ARNG	98	0	0	0	N	N	N	N	Y	N	N	N	N	N	Y
St. Anthony Training Site	US	ID	ARNG	3,336	0	0	0	N	N	Y	N	Y	N	N	N	N	N	N
St. George Training Area	US	UT	ARNG	369	0	0	0	N	N	Y	N	N	N	N	N	N	N	N

Table A-1: Army Training and Testing Range Complex Inventory (Continued)

RANGE COMPLEX	UNITED STATES (US) OR OVERSEAS (OS)	STATE OR COUNTRY	COMMAND/ COMPONENT	LAND AREA FOR RANGES (ACRES)	SPECIAL USE AIRSPACE (SQ NM)	SEA SURFACE AREA (SQ NM)	UNDERWATER TRACKING AREA (SQ NM)	RANGE TYPE											
								AIR-TO-AIR OR AIR-TO-SURFACE	AIR-TO-GROUND	LAND MANEUVER	LAND IMPACT AREA	LAND FIRING RANGE	C2W/EW	OCEAN OPERATING AREA	MOUT	UNDERWATER TRACKING RANGE	AMPHIBIOUS AREA	OTHER	
Stanton LTA	US	NE	ARNG	633	0	0	0	N	N	Y	N	N	N	N	N	N	N	N	N
State Police Academy, VT	US	VT	ARNG	0	0	0	0	N	N	N	N	Y	N	N	N	N	N	N	N
Stewart River	US	AK	ARNG	25,519	0	0	0	N	N	Y	N	Y	N	N	N	N	N	N	N
Stones Ranch MIL RES	US	CT	ARNG	1,884	0	0	0	N	N	Y	N	Y	N	N	Y	N	N	N	Y
Strasburg DZ	US	CO	ARNG	943	0	0	0	N	N	N	N	N	N	N	N	N	N	N	Y
Sunflower Army Ammunition Plant	US	KS	AMC	493	0	0	0	N	N	Y	N	N	N	N	N	N	N	N	Y
Sunny Hills LTA	US	FL	ARNG	11,091	0	0	0	N	N	Y	N	N	N	N	N	N	N	N	N
Swift Acres LTA	US	FL	ARNG	4,154	0	0	0	N	N	Y	N	N	N	N	N	N	N	N	N
Tarlton LTA	US	OH	ARNG	118	0	0	0	N	N	Y	N	N	N	N	N	N	N	N	N
Tiergarten	OS	Germany	USAREUR	234	0	0	0	N	N	Y	N	N	N	N	N	N	N	N	Y
Toledo Usarc	US	OH	USARC	28	0	0	0	N	N	Y	N	N	N	N	N	N	N	N	N
Tooele Army Depot	US	UT	AMC	1,450	0	0	0	N	N	N	N	Y	N	N	N	N	N	N	N
Tosohatchee LTA	US	FL	ARNG	3,445	0	0	0	N	N	N	N	N	N	N	N	N	N	N	Y
Truman Training Site	US	MO	ARNG	565	0	0	0	N	N	Y	N	N	N	N	N	N	N	N	N
TS NAS Fallon RG B19	US	NV	ARNG	132	0	0	0	N	N	N	N	Y	N	N	N	N	N	N	Y
T-Series	OS	Italy	USAREUR	7,222	0	0	0	N	N	Y	N	N	N	N	N	N	N	N	N
TS-Hawk McConnelsville, OH	US	OH	ARNG	395	0	0	0	N	N	Y	N	N	N	N	N	N	N	N	N
Tucumcari Training Site	US	NM	ARNG	63	0	0	0	N	N	Y	N	Y	N	N	N	N	N	N	N
Tullahoma MIL RES	US	TN	ARNG	6,553	0	0	0	N	N	Y	N	Y	N	N	N	N	N	N	Y
Twin Falls Training Site	US	ID	ARNG	312	0	0	0	N	N	Y	N	Y	N	N	N	N	N	N	N
Ukumehame Firing Range	US	HI	ARNG	39	0	0	0	N	N	Y	N	Y	N	N	N	N	N	N	N

Table A-1: Army Training and Testing Range Complex Inventory (Continued)

RANGE COMPLEX	UNITED STATES (US) OR OVERSEAS (OS)	STATE OR COUNTRY	COMMAND/ COMPONENT	LAND AREA FOR RANGES (ACRES)	SPECIAL USE AIRSPACE (SQ NM)	SEA SURFACE AREA (SQ NM)	UNDERWATER TRACKING AREA (SQ NM)	RANGE TYPE										
								AIR-TO-AIR OR AIR-TO-SURFACE	AIR-TO-GROUND	LAND MANEUVER	LAND IMPACT AREA	LAND FIRING RANGE	CZW/EW	OCEAN OPERATING AREA	MOUT	UNDERWATER TRACKING RANGE	AMPHIBIOUS AREA	OTHER
Umatilla Chemical Depot	US	OR	AMC	9	0	0	0	N	N	N	N	Y	N	N	N	N	N	Y
Vail Tree Farm LTA	US	WA	USARC	166,332	0	0	0	N	N	N	N	N	N	N	N	N	N	Y
Van Vleck Ranch	US	CA	ARNG	2,685	0	0	0	N	N	Y	N	N	N	N	N	N	N	Y
Vernal Training Area	US	UT	ARNG	159	0	0	0	N	N	N	N	N	N	N	N	N	N	Y
Wackernheim Small Arms Ranges	OS	Germany	USAREUR	127	0	0	0	N	N	N	N	Y	N	N	N	N	N	Y
Waco Training Area	US	MT	ARNG	4,763	0	0	0	N	N	Y	N	Y	N	N	N	N	N	N
Waiawa	US	HI	ARNG	15	0	0	0	N	N	N	N	N	N	N	N	N	N	Y
Walker Field Airport	US	CO	ARNG	25	0	0	0	N	N	N	N	N	N	N	N	N	N	Y
Wally Eagle DZ	US	CO	ARNG	837	0	0	0	N	N	N	N	N	N	N	N	N	N	Y
Wappapello Training Site	US	MO	ARNG	2,046	0	0	0	N	N	Y	N	Y	N	N	Y	N	N	Y
Wappapellots	US	MO	ARNG	2,187	0	0	0	N	N	Y	N	Y	N	N	N	N	N	Y
Warner Barracks	OS	Germany	USAREUR	2	0	0	0	N	N	N	N	Y	N	N	N	N	N	N
Washington County Memorial Usarc	US	OH	USARC	16	0	0	0	N	N	Y	N	N	N	N	N	N	N	N
Watertown Training Area	US	SD	ARNG	5	0	0	0	N	N	N	N	Y	N	N	N	N	N	N
Watkin Armory	US	CO	ARNG	5	0	0	0	N	N	N	N	N	N	N	N	N	N	Y
Watkins Range	OS	Korea	EUSA	44	0	0	0	N	N	N	N	N	N	N	N	N	N	Y
Weldon Spring	US	MO	ARNG	1,659	0	0	0	N	N	Y	N	Y	N	N	N	N	N	Y
Weldon Springs	US	MO	ARNG	1,659	0	0	0	N	N	Y	N	Y	N	N	N	N	N	Y
Wells Gulch	US	CO	ARNG	57	0	0	0	N	N	N	N	N	N	N	N	N	N	Y
Wendell H. Ford Regional Training Center	US	KY	ARNG	10,770	0	0	0	N	N	Y	Y	Y	N	N	Y	N	N	Y
West Camp Rapid	US	SD	ARNG	566	0	0	0	N	N	Y	N	Y	N	N	N	N	N	Y

RANGE COMPLEX	UNITED STATES (US) OR OVERSEAS (OS)	STATE OR COUNTRY	COMMAND/ COMPONENT	LAND AREA FOR RANGES (ACRES)	SPECIAL USE AIRSPACE (SQ NM)	SEA SURFACE AREA (SQ NM)	UNDERWATER TRACKING AREA (SQ NM)	RANGE TYPE										
								AIR-TO-AIR OR AIR-TO-SURFACE	AIR-TO-GROUND	LAND MANEUVER	LAND IMPACT AREA	LAND FIRING RANGE	CZW/EW	OCEAN OPERATING AREA	MOUT	UNDERWATER TRACKING RANGE	AMPHIBIOUS AREA	OTHER
West Point MIL RES	US	NY	USMA	12,770	4	0	0	N	N	Y	Y	Y	N	N	N	N	N	Y
West Silver Spring Complex	US	WI	USARC	9	0	0	0	N	N	N	N	N	N	N	N	N	N	Y
Western Arng Aviation (Waats) Silverbell	US	AZ	ARNG	160	0	0	0	N	N	N	N	N	N	N	N	N	N	Y
Westminster	US	VT	ARNG	38	0	0	0	N	N	Y	N	Y	N	N	N	N	N	N
Wheeler Army Airfield	US	HI	USARPAC	568	0	0	0	N	N	N	N	N	N	N	N	N	N	Y
Whistler Creek TS	US	AK	USARPAC	543	0	0	0	N	N	Y	N	N	N	N	N	N	N	N
Whitaker Education Training Center	US	OK	ARNG	593	0	0	0	N	N	Y	N	N	N	N	N	N	N	N
White Sands Missile Range	US	NM	ATEC	3,531,715	7,321	0	0	N	N	N	Y	Y	N	N	N	N	N	Y
Whitehorse Range	US	WV	ARNG	1	0	0	0	N	N	N	N	Y	N	N	N	N	N	N
Wilcox	US	AZ	TRADOC	28,814	0	0	0	N	N	N	N	Y	N	N	N	N	N	N
Wildcat Hills State Rec. Area TA	US	NE	ARNG	853	0	0	0	N	N	Y	N	Y	N	N	N	N	N	N
Williston Wets	US	ND	ARNG	345	0	0	0	N	N	Y	N	Y	N	N	N	N	N	N
Wuerzburg	OS	Germany	USAREUR	3,308	0	0	0	N	N	Y	N	Y	N	N	Y	N	N	Y
WV DNR Elk River WMA TA	US	WV	ARNG	277	0	0	0	N	N	Y	N	Y	N	N	N	N	N	Y
WV DNR McClintic WMA TA	US	WV	ARNG	54	0	0	0	N	N	Y	N	Y	N	N	N	N	N	N
WV State Police Academy Range	US	WV	ARNG	12	0	0	0	N	N	N	N	Y	N	N	N	N	N	N
Wvdnr Bluestone Wma Range	US	WV	ARNG	1	0	0	0	N	N	N	N	Y	N	N	N	N	N	N
Wvdnr Plum Orchard Wma Range	US	WV	ARNG	3	0	0	0	N	N	N	N	Y	N	N	N	N	N	N
Yakima Training Center	US	WA	FORSCOM	323,827	0	0	0	N	N	Y	Y	Y	N	N	N	N	N	Y
Youngstown Wets	US	NY	ARNG	848	0	0	0	N	N	Y	N	Y	N	N	N	N	N	Y
Yuma Proving Ground	US	AZ	ATEC	1,033,361	1,500	0	0	N	N	Y	N	Y	N	N	N	N	N	Y

Appendix A: Range Inventory Summary

The Air Force had minimal changes to its Special Use Airspace (SUA) Inventory. Those changes are included in Table A-2.

Table A-2: Air Force SUA Changes

2012 SUA INVENTORY NAME	COMMENT
Avon East MOA, FL	New designation: Avon East, and Avon East High. Avon East High same footprint as Avon East MOA
Lake Placid MOA, FL	New designations: Lake Placid East, Lake Placid North, Lake Placid West
R3202(L)	New designation: R3202, R3202(H)
W453	New designation: W453A, W453B

USD(P&R) will ensure the Military Services review and update their inventories annually and report any necessary changes to Congress.

APPENDIX

B

ACRONYM LIST

ACRONYM	DESCRIPTION
AC	Active Component
ACUB	Army Compatible Use Buffer
AF	Air Force
AFI	Air Force Instruction
AMC	Air Mobility Command
AMT	Aeronautical Mobile Telemetry
ANSC	Analyzer for Net-centric Confederations
ARFORGEN	Army Force Generation
ARNG	Army National Guard
ASCP	Army Sustainability Campaign Plan
ATEC	Army Test and Evaluation Command
BCT	Brigade Combat Team
BLM	Bureau of Land Management
BOEM	Bureau of Ocean Energy Management
C2ISR	Command and Control, Intelligence, Surveillance, and Reconnaissance
CCAR	Climate Change Adaptation Roadmap
CCA WG	Climate Change Adaptation Work Group
COIN	Counterinsurgency
CONUS	Continental United States
CPLO	Community Plans and Liaison Office

Appendix B: Acronym List

ACRONYM	DESCRIPTION
CSE	Center Schedule Enterprise
DoD	Department of Defense
DOI	Department of Interior
DoT&E	Director, Operational Test and Evaluation
DRECP	Desert Renewable Energy Conservation Plan
DRRS	Defense Readiness Reporting System
DRRS-S	DRRS-Strategic
DUSD(I&E)	Deputy Under Secretary of Defense for Installations and Environment
EAP	Encroachment Action Plan
ECP	Encroachment Control Plan
EIS	Environmental Impact Statement
EMS	Electromagnetic Spectrum
ESA	Endangered Species Act
ETC-IS	Exportable Training Capability—Instrumentation System
EUSA	Eighth United States Army
EW	Electronic Warfare
FAA	Federal Aviation Administration
FCC	Federal Communication Commission
FIS	Facility Investment Strategy
FORSCOM	United States Army Forces Command
FY	Fiscal Year
FYDP	Future Years Defense Program
GAO	Government Accountability Office
GPS	Global Positioning System
GRASI	Gulf Regional Airspace Strategic Initiative
HQDA	Headquarters Department of Army

ACRONYM	DESCRIPTION
ILUCC	Interagency Land Use Coordinating Committee
INRMP	Integrated Natural Resources Management Plan
IPT	Integrated Product Team
IS	Instrumentation System
ITE	Integrated Training Environment
JPMRC	Joint Pacific Multinational Readiness Capability
JSF	Joint Strike Fighter
LVCG	Live, Virtual, Constructive, Gaming
LVC-IA	Field Live, Virtual, Constructive-Integrating Architecture
MAGTF	Marine Air Ground Task Force
MAGTFTC	Marine Air-Ground Task Force Training Center
MCAGCC	Marine Corps Air Ground Combat Center
MCAS	Marine Corps Air Station
MCAT	Mission Compatibility Analysis Tool
MCI	Marine Corps Installation
MCTC	Maneuver (dirt) Combat Training Center
MEB	Marine Expeditionary Brigade
MER	Mission Essential Requirements
METSAT	Meteorological Satellite
MILCON	Military Construction
MMPA	Marine Mammal Protection Act
MOA	Military Operating Area
MRTFB	Major Range and Test Facility Base
MTC	Mission Training Complex
NATO	North Atlantic Treaty Organization
NDAA	National Defense Authorization Act

Appendix B: Acronym List

ACRONYM	DESCRIPTION
NDNODS	Non-DOD Owned Non-operational Defense Site
NEPA	National Environmental Policy Act
NGO	Non-governmental Organization
NTC	National Training Center
NTIA	National Telecommunications and Information Administration
OCONUS	Outside of the Continental United States
OE	Operational Environment
OEA	Office of Economic Adjustment
OIPT	Overarching Integrated Product Team
OLA	Office of Legislative Affairs
ONISTT	Open Net-centric Interoperability Standards for Training and Testing
OPAREA	Operating Area
OOS	Ocean Observing System
OSD	Office of the Secretary of Defense
POM	Program Objective Memorandum
PTR	Primary Training Range
RAM	Range Assessment Module
RC	Reserve Component
RCMP	Range Complex Master Plan
RCTC	Regional Collective Training Capability
R&D	Research and Development
REPI	Readiness Environmental Protection Initiative
RFMSS	Range Facility Management Support System
ROD	Record of Decision
RTLS	Range and Training Land Strategy
SEA	Southern Expansion Area

ACRONYM	DESCRIPTION
SERPPAS	Southeast Regional Partnership for Planning and Sustainability
SESEF	Shipboard Electronic Systems Evaluation Facility
SILF	Semantic Interoperability Logical Framework
SOCAL	Southern California Offshore Range Complex
SRI	Sustainable Ranges Initiative
SRR	Sustainable Ranges Report
STRAC	Standards in Training Commission
SUA	Special Use Airspace
TCTS	Tactical Combat Training System
TRADOC	U.S. Army Training and Doctrine Command
TSC	Training Support Center
TSS	Training Support System
TPR	Theater In-Process Review
UAS	Unmanned Aircraft System
USACE	U.S. Army Corps of Engineers
USARC	U.S. Army Reserve Command
USAREUR	U.S. Army Europe
USARPAC	U.S. Army Pacific
U.S.C.	United States Code
USD(P&R)	Under Secretary of Defense for Personnel and Readiness
USFWS	U.S. Fish and Wildlife Service
USMC	U.S. Marine Corps
USCENTCOM	U.S. Central Command
WEA	Western Expansion Areas
WIPT	Working Integrated Product Team
WRP	Western Regional Partnership
XCTC	eXportable Combat Training Capability

